

## SEARCH REQUEST FORM

## Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 11/16/2002  
 Art Unit: 1774 Phone Number 30 5-0788 Serial Number: 09/675,201  
 Mail Box and Bldg/Room Location: CP3 Results Format Preferred (circle): PAPER DISK E-MAIL  
11D30

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Electroluminescent Device  
 Inventors (please provide full names): Sanae Tagami, Hidetsuga Ikeda,  
Chishio Hosokawa, Takashi Arakane  
 Earliest Priority Filing Date: 9/30/1999 (JP 279462/1999)

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search attached compound 3 -  
 wherein at least one of substituents  $X^1$  to  $X_i$   
 i representing a number 12 to 20,  
 comprises an alkenyl group (see the  
 claim for the further exceptions)  
 rather than amine

\*\*\*\*\*  
 STAFF USE ONLY

Staff Use Only	Type of Search	Vendors and cost where applicable
Searcher: <u>John Calve</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: <u>11/22/02</u>	Bibliographic _____	Dr. Link _____
Date Completed: <u>11/22/02</u>	Citation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30 min</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>30 min</u>	Other _____	Other (specify) _____

## Search Results

## Feedback Form (Optional)



Scientific &amp; Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search or contact:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

---

*Voluntary Results Feedback Form*

➤ *I am an examiner in Workgroup:*  *Example:*

➤ *Relevant prior art found, search results used as follows:*

- ☒ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- ☒ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

**Other Comments:**

---

Drop off completed forms in CP3/4 - 3D62.

Draw FYI → record for

J. Strickland

09/797,562

11/18/2002

L5 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS  
AN 2001:247437 HCAPLUS  
DN 134:273348  
TI Organic electroluminescent device  
IN Tagami, Sanae; Ikeda, Hidetsugu; Hosokawa,  
Chishio; Arakane, Takashi  
PA Idemitsu Kosan Co., Ltd., Japan  
SO PCT Int. Appl., 77 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
IC ICM C09K011-06

ICS C07C013-62; C07C211-61; C07C217-92; C07C217-94; C07C229-74;  
C07C255-58; C07D295-12; C07D219-14; C07D223-26; C07D223-14;  
C07D221-18; C07D279-24; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001023497	A1	20010405	WO 2000-JP6658	20000927
W: CN, IN, JP, KR RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1138745	A1	20011004	EP 2000-962882	20000927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 1999-279462	A	19990930		
WO 2000-JP6658	W	20000927		
AB The invention refers to an org. electroluminescent device contg. a compd. with a fluoranthan skeleton and at least one substituted amine or alkenyl.				
ST electroluminescent device fluoranthan				
IT Electroluminescent devices (org. electroluminescent device)				
IT 199121-98-7	208598-26-9	331965-27-6	331965-28-7	331965-29-8
331965-30-1	331965-31-2	331965-32-3	331965-33-4	331965-34-5
331965-35-6	331965-36-7			
RL: DEV (Device component use); USES (Uses) (org. electroluminescent device)				

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

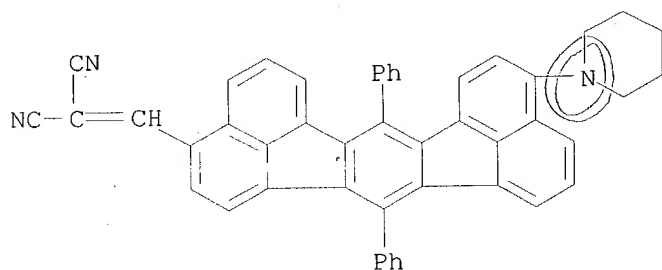
- (1) Canon Inc; JP 06136360 A 1994 HCAPLUS
- (2) Mitsui Chemicals Ltd; JP 10330295 A 1998 HCAPLUS
- (3) Mitsui Chemicals Ltd; JP 10340782 A 1998 HCAPLUS
- (4) Mitsui Chemicals Ltd; JP 10340783 A 1998 HCAPLUS
- (5) Mitsui Chemicals Ltd; JP 10340784 A 1998 HCAPLUS
- (6) Mitsui Chemicals Ltd; JP 1112205 A 1999
- (7) Mitsui Chemicals Ltd; JP 11149987 A 1999 HCAPLUS
- (8) Mitsui Chemicals Ltd; JP 1140360 A 1999
- (9) Mitsui Chemicals Ltd; JP 200034234 A 2000
- (10) Mitsui Toatsu Chemicals Inc; JP 10125467 A 1998 HCAPLUS
- (11) Toyo Ink Manufacturing Co Ltd; JP 10340785 A 1998 HCAPLUS

your  
application  
+  
structures

L6 ANSWER 1 OF 12 REGISTRY COPYRIGHT 2002 ACS  
 RN 331965-36-7 REGISTRY  
 CN Propanedinitrile, [[7,14-diphenyl-10-(1-piperidinyl)acenaphtho[1,2-k]fluoranthene-3-yl]methylene]- (9CI) (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C47 H31 N3  
 SR CA  
 LC STN Files: CA, CAPLUS

## Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C6	C6	6	C6	46.150.18	2
C5N	NC5	6	C5N	46.156.1	1
C5-C5-C6-C6-	C5-C5-C6-C6-	5-5-6-6-6-6-	C26	10533.1.2	1
C6-C6-C6	C6-C6-C6	6			



## Calculated Properties (CALC)

PROPERTY (CODE)	VALUE	NOTE
H acceptors (HAC)	3	(1) ACD
H donors (HD)	0	(1) ACD
logP (LOGP)	12.156+/-0.750	(1) ACD
Molecular Weight (MW)	637.77	(1) ACD

(1) Calculated using Advanced Chemistry Development (ACD) Software Solaris V4.67 ((C) 1994-2002 ACD)

1 REFERENCES IN FILE CA (1962 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

=> d his

(FILE 'HOME' ENTERED AT 15:02:05 ON 18 NOV 2002)

FILE 'HCAPLUS' ENTERED AT 15:02:59 ON 18 NOV 2002

J. Strickland

09/797,562

11/18/2002

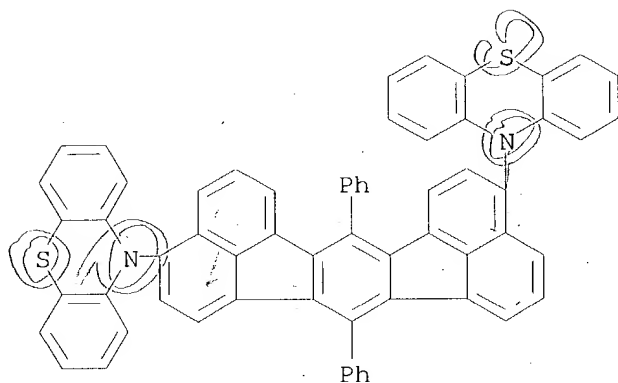
L1 1692 S TAGAMI ?/AU  
L2 36219 S IKEDA ?/AU  
L3 5196 S HOSOKAWA ?/AU  
L4 162 S ARAKANE ?/AU  
L5 1 S L1 AND L2 AND L3 AND L4  
SEL L5 1 RN

FILE 'REGISTRY' ENTERED AT 15:04:09 ON 18 NOV 2002  
L6 12 S E1-E12

=> s 10533.1.2/rid  
L7 862 10533.1.2/RID

⇒ 70 hits HCA.

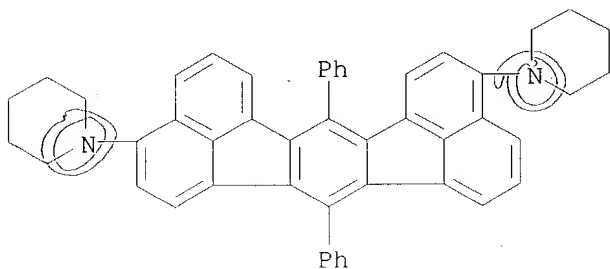
L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN 10H-Phenothiazine, 10,10'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl)bis- (9CI)  
MF C62 H36 N2 S2



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

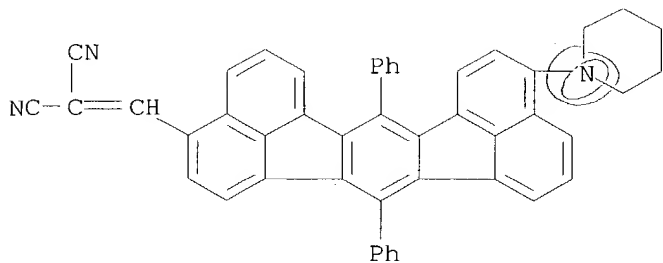
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):11

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN Piperidine, 1,1'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl)bis- (9CI)  
MF C48 H40 N2



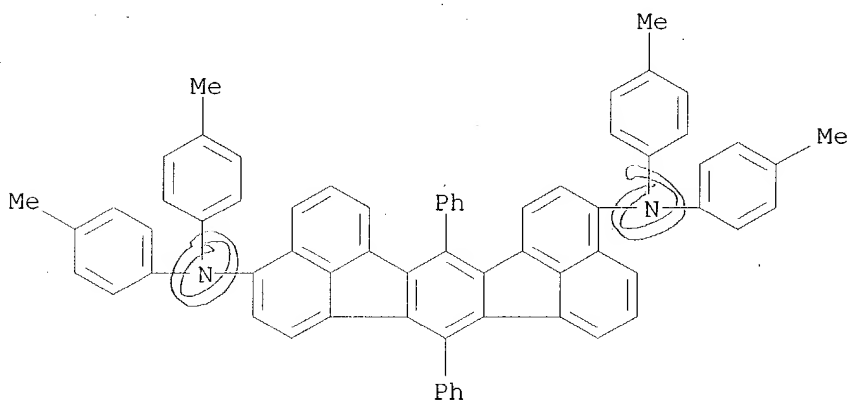
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN Propanedinitrile, [[7,14-diphenyl-10-(1-piperidinyl)acenaphtho[1,2-k]fluoranthene-3-yl]methylene]- (9CI)  
MF C47 H31 N3



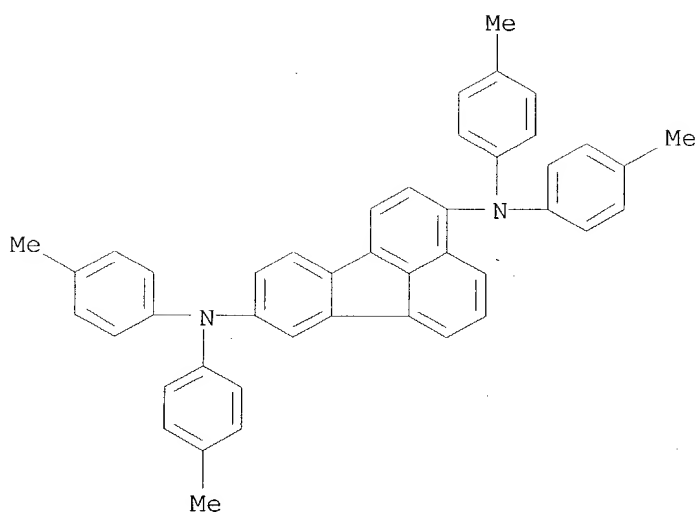
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-7,14-diphenyl- (9CI)  
MF C66 H48 N2

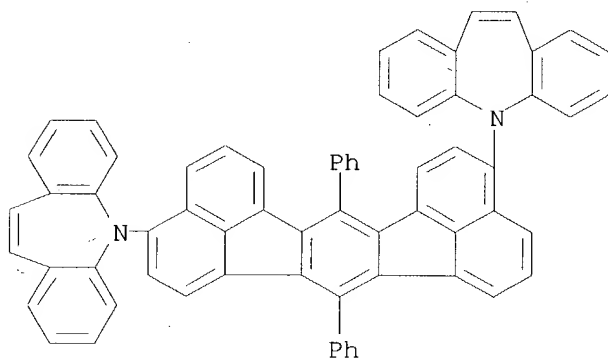


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN 3,8-Fluoranthenediamine, N,N,N',N'-tetrakis(4-methylphenyl)- (9CI)  
MF C44 H36 N2



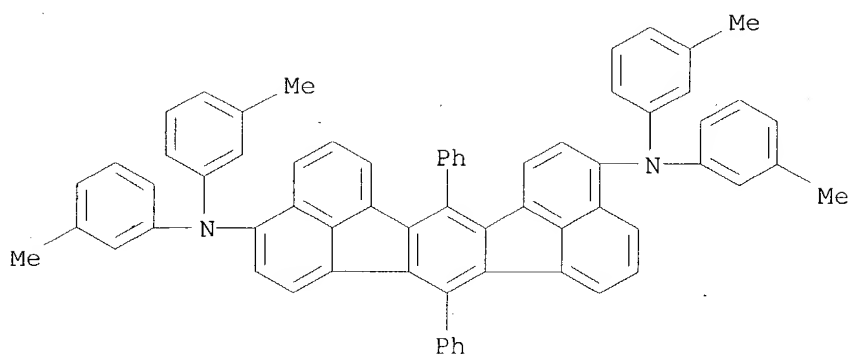
L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN 5H-Dibenz[b,f]azepine, 5,5'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-  
 3,10-diyl)bis- (9CI)  
 MF C66 H40 N2



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

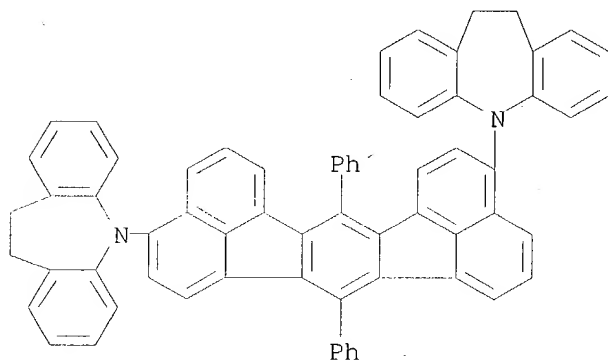
L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N'-tetrakis(3-  
 methylphenyl)-7,14-diphenyl- (9CI)  
 MF C66 H48 N2





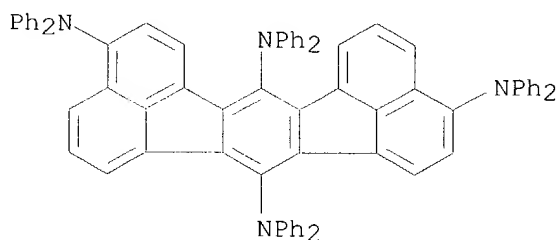
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN 5H-Dibenz[b,f]azepine, 5,5'-(7,14-diphenylacenaphtho[1,2-k]fluoranthene-  
 3,10-diyl)bis[10,11-dihydro- (9CI)  
 MF C66 H44 N2



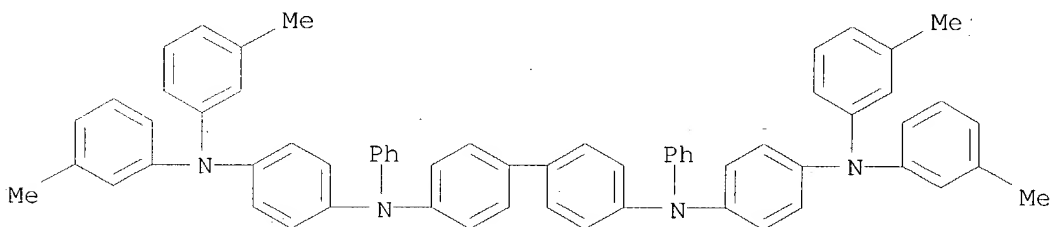
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN Acenaphtho[1,2-k]fluoranthene-3,7,10,14-tetramine,  
 N,N,N',N',N'',N'',N''',N'''-octaphenyl- (9CI)  
 MF C74 H50 N4



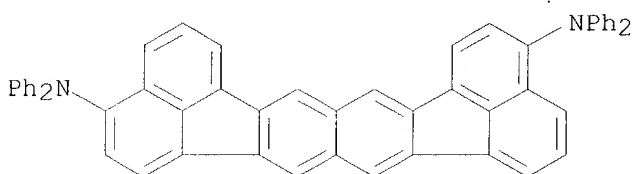
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN [1,1'-Biphenyl]-4,4'-diamine, N,N'-bis[4-[bis(3-methylphenyl)amino]phenyl]-  
 N,N'-diphenyl- (9CI)  
 MF C64 H54 N4



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN Fluorantheno[8,9-k]fluoranthene-3,11-diamine, N,N,N',N'-tetraphenyl- (9CI)  
 MF C54 H34 N2



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L6 12 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
 IN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-hexaphenyl-  
 (9CI)  
 MF C62 H40 N2

=> d his nofile

Dawn,

For this structure search I took the ring identifier for the ring system and "NOT"ed out the Nitrogen. Then I did some text searching on electrolumin. I printed out the first structure in each record only - because there were over 700 hit structures in L7 alone.

If you have any questions, please feel free to call me at 308-4139.

John

FILE 'REGISTRY' ENTERED AT 15:00:42 ON 22 NOV 2002

L1 862 SEA ABB=ON PLU=ON 10533.1.2/RID  
L2 30 SEA ABB=ON PLU=ON L1 AND 1-9/N  
L3 832 SEA ABB=ON PLU=ON L1 NOT L2

FILE 'HCAPLUS' ENTERED AT 15:03:00 ON 22 NOV 2002

L4 64 SEA ABB=ON PLU=ON L3  
L5 11 SEA ABB=ON PLU=ON L2  
L6 51458 SEA ABB=ON PLU=ON EL OR E(W)L OR ELECTROLUM!N? OR (ELECTRO  
OR ORGANO OR ORG#) (2A) (LUM!N? OR LIGHT?) (2A) (EMIT? OR EMISSION?  
OR SOURC?)  
L7 22 SEA ABB=ON PLU=ON L4 AND L6  
L8 8 SEA ABB=ON PLU=ON L5 AND L6  
SEL HIT RN L7 1-22  
SEL HIT RN L5 1-11  
D L7 ALL  
D L7 2 ALL  
D L7 7 ALL

=> d L7 1-22 ibib abs hitind fhitstr

L7 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:219990 HCAPLUS

DOCUMENT NUMBER: 136:238876

TITLE: Fluoranthenylnaphthylacenaphthofluoranthene  
derivatives and organic **electroluminescent**  
devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 63 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002083680	A2	20020322	JP 2000-221972	20000724
PRIORITY APPLN. INFO.:			JP 2000-206283	A 20000707
OTHER SOURCE(S):	MARPAT 136:238876			

AB The invention relates to an org. **electroluminescent** device  
comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg.  
.gtoreq.1 3-(3'-fluoranthenyl)-11-(1'-naphthyl)acenaththo[1,2-

k]fluoranthene derivs..  
IC ICM H05B033-14  
ICS C07C013-64; C07C025-22; C07C043-21; C09K011-06  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25  
ST **electroluminescent** device fluoranthenylnaphthylacenaphtho  
fluoranthene  
IT **Electroluminescent** devices  
(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for)  
IT Fluorescent substances  
(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT Polycarbonates, uses  
RL: DEV (Device component use); USES (Uses)  
(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT Hydrocarbons, uses  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or  
reagent); USES (Uses)  
(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT 1450-63-1  
RL: DEV (Device component use); USES (Uses)  
(blue light-emitting component; novel fluoranthenylnaphthylacenaphthofl  
uoranthene derivs. for org. **electroluminescent** devices)  
IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green light-emitting component; novel fluoranthenylnaphthylacenaphthof  
luoranthene derivs. for org. **electroluminescent** devices)  
IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel fluoranthenylnaphthylacenaphthof  
luoranthene derivs. for org. **electroluminescent** devices)  
IT 24601-13-6 146162-48-3 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel fluoranthenylnaphthylacenaphthofluo  
ranthene derivs. for org. **electroluminescent** devices)  
IT 2085-33-8 25067-59-8 124729-98-2 138372-67-5 150405-69-9  
RL: DEV (Device component use); USES (Uses)  
(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT 390767-71-2P 390767-73-4P 390767-75-6P  
390767-76-7P 390767-78-9P 390767-80-3P  
390767-82-5P 390767-84-7P 390767-86-9P  
390767-88-1P 390767-90-5P 390767-92-7P  
390767-94-9P 390767-96-1P 390767-98-3P  
390768-03-3P 390768-05-5P 390768-07-7P  
390768-09-9P 390768-10-2P 390768-11-3P  
390768-13-5P 390768-18-0P 390768-21-5P  
390768-23-7P 390768-25-9P 390768-27-1P  
390768-29-3P 390768-31-7P 390768-33-9P  
390768-35-1P 390768-37-3P 390768-39-5P  
390768-41-9P 390768-43-1P 390768-45-3P  
390768-47-5P 390768-49-7P 390768-51-1P  
390768-53-3P 390768-55-5P 390768-57-7P  
390768-58-8P 402961-59-5P 402961-60-8P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.

**electroluminescent devices)**

IT 359012-63-8 359012-64-9 359012-71-8 359012-72-9 359012-74-1  
359012-75-2 359012-79-6 359012-80-9 359012-82-1 359012-83-2  
359012-85-4 359012-91-2 359012-92-3 359012-95-6 359012-96-7  
359013-01-7 359013-03-9 370083-86-6 370083-87-7 370083-89-9  
370083-91-3 370083-95-7 370083-96-8 370084-33-6 370084-56-3  
370084-57-4 370084-58-5 370084-60-9 370084-68-7 390430-89-4  
390430-91-8 390431-09-1 390431-25-1  
390431-35-3 390431-55-7 390431-59-1  
390431-66-0 390431-70-6 390431-72-8  
390431-81-9 402961-61-9 402961-62-0  
402961-63-1 402961-64-2 402961-65-3  
402961-66-4 402961-67-5 402961-68-6  
402961-69-7 402961-70-0 402961-71-1  
402961-72-2 402961-73-3 402961-74-4  
402961-75-5 402961-76-6 402961-77-7  
402961-78-8 402961-79-9 402961-80-2  
402961-81-3 402961-82-4 402961-83-5 402961-84-6  
402961-85-7 402961-86-8 402961-87-9 402961-88-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.

**electroluminescent devices)**

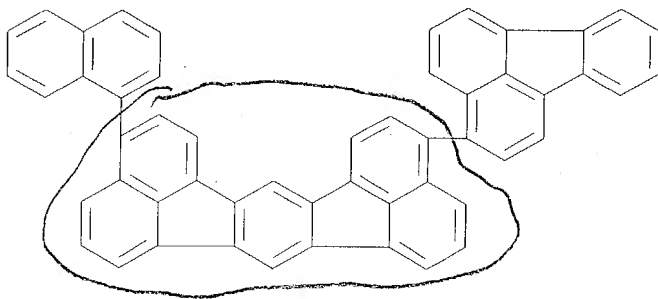
IT 390767-71-2P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)

(novel fluoranthenylnaphthylacenaphthofluoranthene derivs. for org.

**electroluminescent devices)**

RN 390767-71-2 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3-(3-fluoranthenyl)-11-(1-naphthalenyl)-  
(9CI) (CA INDEX NAME)

L7 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:139110 HCAPLUS

DOCUMENT NUMBER: 136:175292

TITLE: Dibenzo[kl,rst]acenaphtho[1',2':6,7]fluoreno[9,1,2-cde]pentaphene derivatives and organic  
**electroluminescent** devices using themINVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Totani,  
Yoshiyuki; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002056979	A2	20020222	JP 2000-242475	20000810

OTHER SOURCE(S): MARPAT 136:175292

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 dibenzo[kl,rst]acenaphtho[1',2':6,7]fluoreno[9,1,2-cde]pentaphene derivs..

IC ICM H05B033-14  
ICS C07C013-62; C07C043-20; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25

ST **electroluminescent** device benzoacenaphthofluorenopentaphene deriv

IT **Electroluminescent** devices  
(novel dibenzoacenaphthofluorenopentaphene derivs. for)

IT Fluorescent substances  
(novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT Hydrocarbons, uses  
Polycarbonates, uses  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT 1450-63-1  
RL: DEV (Device component use); USES (Uses)  
(blue-light-emitting component; novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green-light-emitting component; novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT 138372-67-5 146162-48-3 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT 2085-33-8, Alq3 25067-59-8 124729-98-2 150405-69-9 396100-11-1  
396100-12-2 396100-13-3 396100-14-4 396100-15-5 396100-16-6  
396100-17-7 396100-18-8 396100-19-9 396100-20-2 396100-21-3  
396100-22-4 396100-23-5 396100-24-6 396100-25-7 396100-26-8  
396100-27-9 396100-28-0 396100-29-1 396100-30-4 396100-31-5  
396100-32-6 396100-33-7 396100-34-8 396100-35-9 396100-36-0  
396100-37-1 396100-38-2 396100-39-3 396100-40-6 396100-41-7  
396100-42-8 396100-43-9 396100-44-0 396100-45-1 396100-46-2  
396100-47-3  
RL: DEV (Device component use); USES (Uses)  
(novel dibenzoacenaphthofluorenopentaphene derivs. for org. **electroluminescent** devices)

IT 390761-74-7 390761-74-7D, derivs. 390762-17-1  
396099-75-5 396099-76-6 396099-77-7  
396099-78-8 396099-79-9 396099-80-2  
396099-81-3 396099-82-4 396099-83-5  
396099-84-6 396099-85-7 396099-86-8

396099-87-9 396099-88-0 396099-89-1  
396099-90-4 396099-92-6 396099-93-7  
396099-94-8 396099-95-9 396099-96-0  
396099-97-1 396099-98-2 396099-99-3  
396100-00-8 396100-01-9 396100-02-0  
396100-03-1 396100-04-2 396100-05-3  
396100-06-4 396100-07-5 396100-08-6  
396100-09-7 396100-10-0

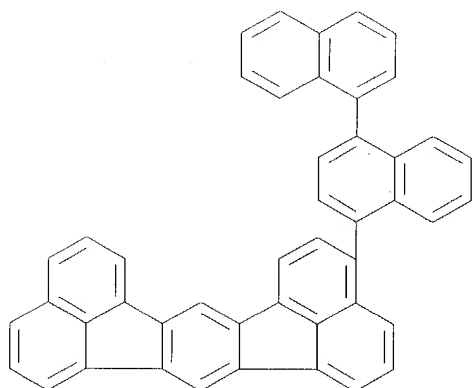
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel dibenzoacenaphthofluorenopentaphene derivs. for org.  
**electroluminescent** devices)

IT 390761-74-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel dibenzoacenaphthofluorenopentaphene derivs. for org.  
**electroluminescent** devices)

RN 390761-74-7 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3-[1,1'-binaphthalen]-4-yl- (9CI) (CA  
INDEX NAME)



L7 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:139109 HCAPLUS

DOCUMENT NUMBER: 136:175291

TITLE: Benzo[*rst*]acenaphtho[1',2':6,7]fluoreno[9,1,2-*cde*]benzo[6,7]fluoreno[2',1',9'-*klm*]pentaphene derivatives and organic **electroluminescent** devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Totani, Yoshiyuki; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 74 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002056978	A2	20020222	JP 2000-241329	20000809

OTHER SOURCE(S): MARPAT 136:175291

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg.

.gtoreq.1 benzo[rst]acenaphtho[1',2':6,7]fluoreno[9,1,2-cde]benzo[6,7]fluoreno[2',1',9'-klm]pentaphene derivs..  
IC ICM H05B033-14  
ICS C07C013-62; C07C025-22; C07C043-20; C09K011-06  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25  
ST **electroluminescent** device benzoacenaphthofluoreno benzofluorenopentaphene deriv  
IT **Electroluminescent** devices  
(novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for)  
IT Fluorescent substances  
(novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT Hydrocarbons, uses  
Polycarbonates, uses  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT 1450-63-1  
RL: DEV (Device component use); USES (Uses)  
(blue-light-emitting component; novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green-light-emitting component; novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport payer; novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT 138372-67-5 146162-48-3 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT 2085-33-8, Alq3 25067-59-8 124729-98-2 150405-69-9 396094-04-5  
396094-05-6 396094-06-7 396094-07-8 396094-08-9 396094-09-0  
396094-10-3 396094-11-4 396094-12-5 396094-13-6 396094-14-7  
396094-15-8 396094-16-9 396094-17-0 396094-18-1 396094-19-2  
396094-20-5 396094-21-6 396094-22-7 396094-23-8 396094-24-9  
396094-25-0 396094-26-1 396094-27-2 396094-28-3 396094-29-4  
396094-30-7 396094-31-8 396094-32-9 396094-33-0 396094-34-1  
396094-35-2 396094-36-3 396094-37-4 396094-38-5 396094-40-9  
396094-42-1 396094-44-3 396094-46-5 396094-47-6 396094-48-7  
396094-49-8 396094-50-1 396094-51-2 396094-52-3 396094-53-4  
396094-55-6 396094-56-7 396094-57-8 396094-58-9  
RL: DEV (Device component use); USES (Uses)  
(novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org. **electroluminescent** devices)  
IT 396093-54-2 396093-54-2D, derivs. 396093-55-3  
396093-56-4 396093-57-5 396093-58-6  
396093-59-7 396093-60-0 396093-61-1  
396093-62-2 396093-63-3 396093-64-4  
396093-65-5 396093-66-6 396093-67-7  
396093-68-8 396093-69-9 396093-70-2  
396093-71-3 396093-72-4 396093-73-5  
396093-74-6 396093-75-7 396093-76-8  
396093-77-9 396093-78-0 396093-79-1  
396093-80-4 396093-81-5 396093-82-6



396093-83-7 396093-84-8 396093-85-9  
396093-86-0 396093-87-1 396093-88-2  
396093-89-3 396093-90-6 396093-91-7  
396093-92-8 396093-93-9 396093-94-0  
396093-95-1 396093-96-2 396093-97-3  
396093-98-4 396093-99-5 396094-00-1  
396094-01-2 396094-02-3 396094-03-4

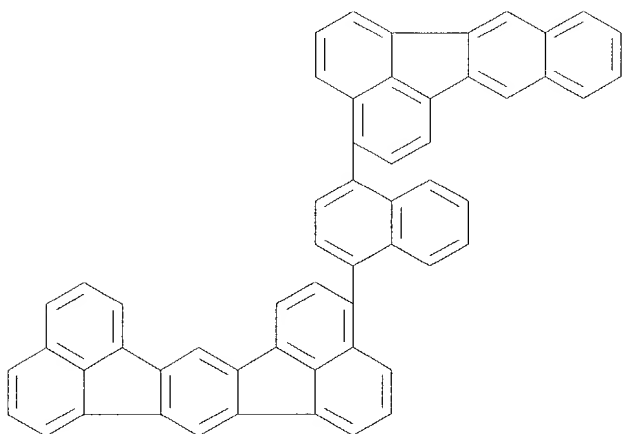
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org.  
**electroluminescent** devices)

IT 396093-54-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel benzoacenaphthofluorenobenzofluorenopentaphene derivs. for org.  
**electroluminescent** devices)

RN 396093-54-2 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3-(4-benzo[k]fluoranthen-3-yl-1-naphthalenyl)- (9CI) (CA INDEX NAME)



L7 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:139108 HCAPLUS

DOCUMENT NUMBER: 136:175290

TITLE: Benzo[*rst*]acenaphtho[1',2':6,7]fluoreno[9,1,2-cde]fluoreno[2',1',9'-klm]pentaphene derivatives and organic **electroluminescent** devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Totani, Yoshiyuki; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 67 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002056977	A2	20020222	JP 2000-241328	20000809

OTHER SOURCE(S): MARPAT 136:175290

AB The invention relates to an org. **electroluminescent** device

comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg.  
.gtoreq.1 benzo[rst]acenaphtho[1',2':6,7]fluoreno[9,1,2-  
cde]fluoreno[2',1',9'-klm]pentaphene derivs..

IC ICM H05B033-14  
ICS C07C013-62; C07C043-20; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
Section cross-reference(s): 25

ST **electroluminescent** device benzoacenaphthofluoreno  
fluorenopentaphene deriv

IT Hydrocarbons, uses  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or  
reagent); USES (Uses)  
(for **electroluminescent** devices)

IT **Electroluminescent** devices  
(novel benzo[rst]acenaphthofluorenofluorenopentaphene derivs. for)

IT Fluorescent substances  
(novel benzo[rst]acenaphthofluorenofluorenopentaphene derivs. for  
**electroluminescent** devices)

IT Polycarbonates, uses  
RL: DEV (Device component use); USES (Uses)  
(novel benzo[rst]acenaphthofluorenofluorenopentaphene derivs. for  
**electroluminescent** devices)

IT 1450-63-1  
RL: DEV (Device component use); USES (Uses)  
(blue-light-emitting component; novel benzo[rst]acenaphthofluorenofluor  
enopentaphene derivs. for **electroluminescent** devices)

IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green-light-emitting component; novel benzo[rst]acenaphthofluorenofluo  
renopentaphene derivs. for **electroluminescent** devices)

IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel benzo[rst]acenaphthofluorenofluo  
renopentaphene derivs. for **electroluminescent** devices)

IT 24601-13-6 138372-67-5 146162-48-3  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel benzo[rst]acenaphthofluorenofluoren  
opentaphene derivs. for **electroluminescent** devices)

IT 2085-33-8, Alq3 25067-59-8 124729-98-2 150405-69-9  
**396083-09-3** 396083-98-0 396084-00-7 396084-02-9  
396084-04-1 396084-06-3 396084-08-5 396084-10-9 396084-12-1  
396084-14-3 396084-16-5 396084-18-7 396084-20-1 396084-22-3  
396084-24-5 396084-26-7 396084-28-9 396084-36-9 396084-38-1  
396084-40-5 396084-42-7 396084-44-9 396084-46-1 396084-48-3  
396084-50-7 396084-52-9 396084-54-1 396084-56-3 396084-58-5  
396084-60-9 396084-62-1 396084-64-3 396084-66-5 396084-68-7  
396084-70-1 396084-72-3 396084-74-5 396084-76-7 396084-78-9  
396084-80-3 396084-82-5 396084-84-7 396084-86-9 396084-88-1  
396084-90-5 396084-93-8  
RL: DEV (Device component use); USES (Uses)  
(novel benzo[rst]acenaphthofluorenofluorenopentaphene derivs. for  
**electroluminescent** devices)

IT **396083-09-3D**, derivs. **396083-11-7** **396083-13-9**  
**396083-16-2** **396083-18-4** **396083-20-8**  
**396083-22-0** **396083-24-2** **396083-26-4**  
**396083-28-6** **396083-30-0** **396083-32-2**  
**396083-34-4** **396083-36-6** **396083-38-8**  
**396083-40-2** **396083-42-4** **396083-44-6**  
**396083-46-8** **396083-48-0** **396083-49-1**

396083-50-4 396083-52-6 396083-54-8  
396083-56-0 396083-58-2 396083-60-6  
396083-62-8 396083-64-0 396083-66-2 39608  
3-68-4 396083-70-8 396083-73-1  
396083-75-3 396083-77-5 396083-78-6  
396083-80-0 396083-82-2 396083-84-4  
396083-86-6 396083-88-8 396083-90-2  
396083-92-4 396083-94-6 396083-96-8

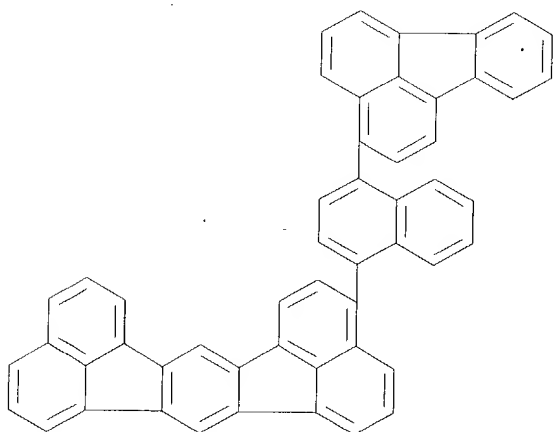
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel benzo[rst]acenaphthofluorenofluorenopentaphene derivs. for  
**electroluminescent** devices)

IT 396083-09-3

RL: DEV (Device component use); USES (Uses)  
(novel benzo[rst]acenaphthofluorenofluorenopentaphene derivs. for  
**electroluminescent** devices)

RN 396083-09-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3-[4-(3-fluoranthenyl)-1-naphthalenyl]-  
(9CI) (CA INDEX NAME)



L7 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:69662 HCAPLUS

DOCUMENT NUMBER: 136:126327

TITLE: Acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene  
derivatives and organic **electroluminescent**  
devices containing the same

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 48 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

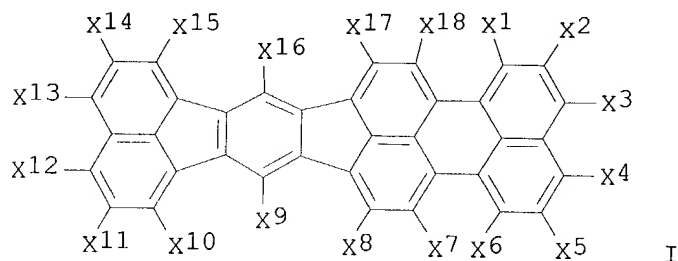
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002025778	A2	20020125	JP 2000-209227	20000711

OTHER SOURCE(S): MARPAT 136:126327

GI



- AB The org. **EL** devices have a pair of electrodes and in between, .gtoreq.1 layers, maybe emitter layers, contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. which may be shown as I (X1-X18 = H, halogen, alkyl, alkoxy, aryl). The I-contg. layer may further contain luminescent organometal complexes and triarylamine derivs. The device may further have a hole injection and transport layer and an electron injection and transport layer between the electrodes. The device have high luminescent efficiency and high brightness.
- IC ICM H05B033-14  
ICS C07C013-62; C07C043-21; C08K005-01; C08K005-057; C08K005-18; C08L101-00; C09K011-06
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25, 75
- ST org **electroluminescent** device emitter indenoindacenodiperylene deriv
- IT Polycyclic compounds  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(arom. hydrocarbons; org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)
- IT Amines, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(aryl, tertiary, emitter layer contg.; org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)
- IT **Electroluminescent** devices  
(org.; org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)
- IT Aromatic hydrocarbons, uses  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polycyclic; org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)
- IT 2085-33-8, Alq3 138372-67-5, 1,3-Bis[5'-(p-tert-butylphenyl)-1,3,4-oxadiazole-2'-yl]benzene  
RL: TEM (Technical or engineered material use); USES (Uses)  
(electron injection and transport layer; org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)
- IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene 24601-13-6, Bis(2-methyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2-methyl-8-quinolinolato)aluminum 38215-36-0, Coumarin 6 146162-48-3, Bis(2,4-dimethyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2,4-dimethyl-8-

quinolinolato)aluminum 146162-54-1, Aluminum bis(2-methyl-8-quinolinolate) 4-methylphenolate

RL: TEM (Technical or engineered material use); USES (Uses)

(emitter layer contg.; org. **EL** devices contg.

acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)

IT	390760-70-0P	390760-72-2P	390760-74-4P	390760-76-6P	390760-78-8P
	390760-80-2P	390760-82-4P	390760-83-5P	390760-84-6P	390760-87-9P
	390760-88-0P	390760-90-4P	390760-92-6P	390760-94-8P	390760-96-0P
	390760-98-2P	390761-00-9P	390761-02-1P	390761-04-3P	390761-06-5P
	390761-08-7P	390761-10-1P	390761-11-2P	390761-13-4P	390761-15-6P
	390761-17-8P	390761-19-0P	390761-21-4P	390761-23-6P	390761-25-8P
	390761-28-1P	390761-29-2P	390761-30-5P	390761-31-6P	390761-33-8P
	390761-35-0P	390761-37-2P			

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(emitter layers for org. **EL** devices)

IT 65181-78-4, 4,4'-Bis[N-phenyl-N-(3''-methylphenyl)amino]biphenyl  
124729-98-2, 4,4',4'''-Tris[N-(3'''-methylphenyl)-N-phenylamino]triphenylamine

RL: TEM (Technical or engineered material use); USES (Uses)

(hole injection and transport layer; org. **EL** devices contg.

acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers)

IT	390761-39-4	390761-41-8	390761-43-0
	390761-45-2	390761-47-4	390761-49-6
	390761-51-0	390761-53-2	390761-55-4
	390761-57-6	390761-59-8	390761-61-2
	390761-64-5	390761-67-8	390761-69-0
	390761-70-3	390761-72-5	390761-74-7
	390761-77-0	390761-80-5	390761-83-8
	390761-86-1	390761-89-4	390761-91-8
	390761-94-1	390761-98-5	390762-01-3
	390762-04-6	390762-07-9	390762-09-1
	390762-11-5	390762-13-7	390762-15-9
	390762-17-1	390762-19-3	390762-21-7
	390762-22-8		

RL: RCT (Reactant); RACT (Reactant or reagent)

(org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers prep. from)

IT 13922-41-3, 1-Naphthylboric acid 367489-92-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(starting materials in prepn. of acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. for emitter layers for org. **EL** devices)

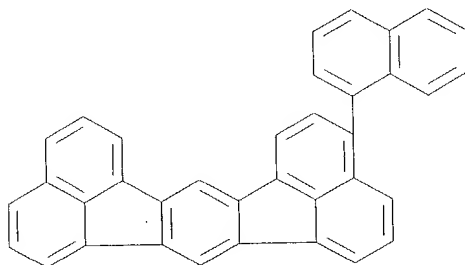
IT 390761-39-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(org. **EL** devices contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]perylene derivs. in emitter layers prep. from)

RN 390761-39-4 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3-(1-naphthalenyl)- (9CI) (CA INDEX NAME)



L7 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:69658 HCAPLUS

DOCUMENT NUMBER: 136:126323

TITLE: 3-(Benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivatives and organic **electroluminescent** devices containing the same

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 74 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

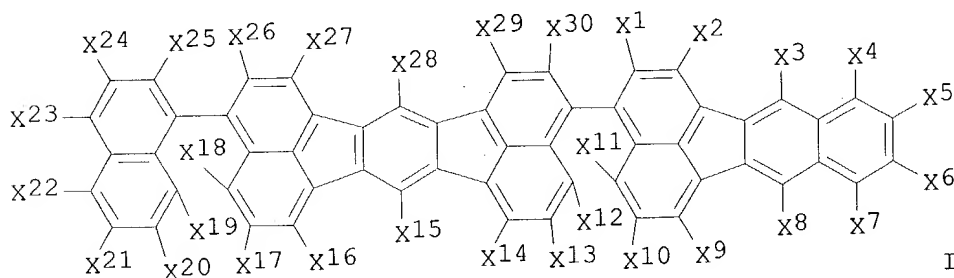
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002025774	A2	20020125	JP 2000-206284	20000707

OTHER SOURCE(S): MARPAT 136:126323

GI



AB The org. **EL** devices have a pair of electrodes and in between, .gtoreq.1 layers, maybe emitter layers, contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs., which may be shown as I (X1-X30 = H, halogen, alkyl, alkoxy, aryl). The I-contg. layer may further contain luminescent organometal complexes and triarylamine derivs. The device may further have a hole injection and transport layer and an electron injection and transport layer between the electrodes. The device have high luminescent efficiency and high brightness.

IC ICM H05B033-14

ICS C07C013-66; C07C025-22; C07C043-21; C09K011-06  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25, 74  
ST org **electroluminescent** device emitter benzofluoranthene naphthyl acenaphthofluoranthene deriv  
IT Polycyclic compounds  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(arom. hydrocarbons; org. **EL** device contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)  
IT Amines, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(aryl, tertiary, emitter layer contg.; org. **EL** device contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)  
IT **Electroluminescent** devices  
(org.; org. **EL** device contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)  
IT Aromatic hydrocarbons, uses  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polycyclic; org. **EL** device contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)  
IT 2085-33-8, Alq3 138372-67-5  
RL: TEM (Technical or engineered material use); USES (Uses)  
(electron injection and transport layer; org. **EL** device contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)  
IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene 24601-13-6, Bis(2-methyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2-methyl-8-quinolinolato)aluminum 38215-36-0, Coumarin 6 146162-48-3, Bis(2,4-dimethyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2,4-dimethyl-8-quinolinolato)aluminum 146162-54-1 150405-69-9, 3-(4'-tert-Butylphenyl)-4-phenyl-5-(4''-biphenyl)-1,2,4-triazole  
RL: TEM (Technical or engineered material use); USES (Uses)  
(emitter layer contg.; org. **EL** device contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)  
IT 390429-96-6P 390429-98-8P 390430-00-9P  
390430-02-1P 390430-04-3P 390430-06-5P  
390430-08-7P 390430-09-8P 390430-11-2P  
390430-13-4P 390430-15-6P 390430-17-8P  
390430-19-0P 390430-21-4P 390430-22-5P  
390430-24-7P 390430-26-9P 390430-27-0P  
390430-29-2P 390430-31-6P 390430-33-8P  
390430-35-0P 390430-37-2P 390430-39-4P  
390430-41-8P 390430-43-0P 390430-45-2P  
390430-47-4P 390430-49-6P 390430-51-0P  
390430-53-2P 390430-55-4P 390430-57-6P  
390430-59-8P 390430-61-2P 390430-63-4P  
390430-65-6P 390430-67-8P 390430-69-0P  
390430-71-4P 390430-73-6P 390430-75-8P  
390430-77-0P 390430-79-2P 390430-81-6P  
390430-82-7P 390430-83-8P 390430-85-0P  
390430-86-1P 390430-88-3P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(emitter layers for org. **EL** devices)

IT 65181-78-4, 4,4'-Bis[N-phenyl-N-(3'-methylphenyl)amino]biphenyl  
RL: TEM (Technical or engineered material use); USES (Uses)  
(hole injection and transport layer; org. **EL** device contg.  
3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers)

IT **390430-89-4P**  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
RACT (Reactant or reagent)  
(org. **EL** devices contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers prepd. from)

IT 276249-57-1 276249-59-3 278599-87-4 278599-88-5 278599-89-6  
359434-86-9 359434-87-0 359434-89-2 359434-92-7 359434-93-8  
359434-95-0 359434-98-3 359435-00-0 359435-01-1 359435-03-3  
359435-05-5 359435-07-7 359435-09-9 359435-10-2 359435-12-4  
359435-15-7 359435-16-8 359435-17-9 373635-01-9 373635-04-2  
373635-06-4 373635-13-3 373635-22-4 373635-24-6 373635-29-1  
373635-31-5 373635-33-7 373635-37-1 373635-41-7 373635-45-1

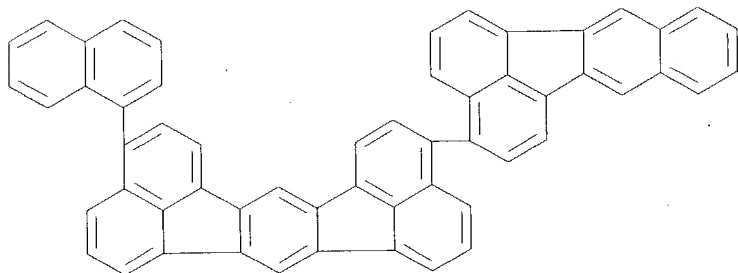
**390430-91-8 390431-05-7 390431-07-9**  
**390431-09-1 390431-22-8 390431-25-1**  
**390431-28-4 390431-30-8 390431-32-0**  
**390431-34-2 390431-35-3 390431-36-4**  
**390431-37-5 390431-39-7 390431-41-1**  
**390431-43-3 390431-45-5 390431-47-7**  
**390431-49-9 390431-52-4 390431-55-7**  
**390431-59-1 390431-61-5 390431-63-7**  
**390431-65-9 390431-66-0 390431-68-2**  
**390431-70-6 390431-72-8 390431-74-0**  
**390431-76-2 390431-78-4 390431-80-8**  
**390431-81-9**

RL: RCT (Reactant); RACT (Reactant or reagent)  
(org. **EL** devices contg. 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. in emitter layers prepd. from)

IT 13922-41-3, 1-Naphthylboric acid **370098-12-7**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(starting material for prepn. of 3-(benzo[k]fluoranthene-3'-yl)-11-(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs. for emitter layers of org. **EL** devices)

IT **390429-96-6P**  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(emitter layers for org. **EL** devices)

RN 390429-96-6 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3-benzo[k]fluoranthene-3-yl-11-(1-naphthalenyl)- (9CI) (CA INDEX NAME)

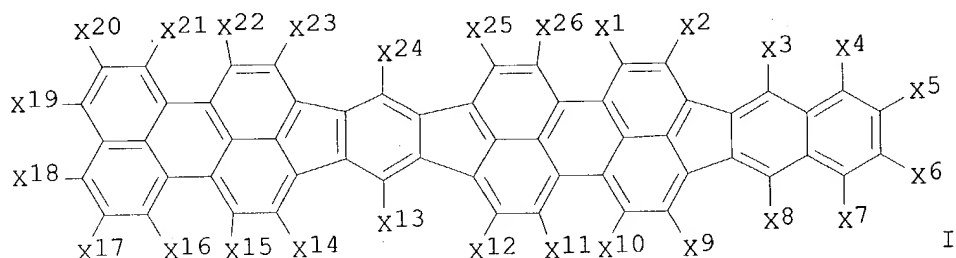




L7 ANSWER 7 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2002:69657 HCAPLUS  
DOCUMENT NUMBER: 136:126322  
TITLE: Benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivatives and organic **electroluminescent** devices containing the same  
INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka, Masakatsu  
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 77 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002025773	A2	20020125	JP 2000-206282	20000707

OTHER SOURCE(S): MARPAT 136:126322  
GI



AB The org. **EL** devices have a pair of electrodes and in between, .gtoreq.1 layers, maybe emitter layers, contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs., which may be shown as I (X1-X24 = H, halogen, alkyl, alkoxy, aryl). The I-contg. layer may further contain luminescent organometal complexes and triarylamine derivs. The device may further have a hole injection and transport layer and an electron injection and transport layer between the electrodes. The device have high luminescent efficiency and high brightness.

IC ICM H05B033-14

ICS C07C015-20; C07C025-22; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 74

ST org **electroluminescent** device emitter  
benzoindenoindacenodiperylene deriv

IT Polycyclic compounds

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(arom. hydrocarbons; org. **EL** devices with emitter layers  
contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT Amines, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(aryl, tertiary, emitter layer contg.; org. **EL** devices with emitter layers contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT **Electroluminescent** devices  
(org.; org. **EL** devices contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs. in emitter layers).

IT Aromatic hydrocarbons, uses  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polycyclic; org. **EL** devices with emitter layers contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT 2085-33-8 138372-67-5  
RL: TEM (Technical or engineered material use); USES (Uses)  
(electron injection and transport layer; org. **EL** devices with emitter layers contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene 24601-13-6,  
Bis(2-methyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2-methyl-8-quinolinolato)aluminum 38215-36-0, Coumarin 6 146162-48-3,  
Bis(2,4-dimethyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2,4-dimethyl-8-quinolinolato)aluminum 146162-54-1 150405-69-9, 3-(4'-tert-Butylphenyl)-4-phenyl-5-(4''-biphenyl)-1,2,4-triazole  
RL: TEM (Technical or engineered material use); USES (Uses)  
(emitter layer contg.; org. **EL** devices with emitter layers contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT 390801-10-2P 390801-11-3P 390801-12-4P 390801-13-5P 390801-14-6P  
390801-15-7P 390801-16-8P 390801-17-9P 390801-18-0P 390801-19-1P  
390801-20-4P 390801-21-5P 390801-22-6P 390801-23-7P 390801-24-8P  
390801-25-9P 390801-26-0P 390801-27-1P 390801-28-2P 390801-29-3P  
390801-30-6P 390801-31-7P 390801-32-8P 390801-33-9P 390801-34-0P  
390801-36-2P 390801-38-4P 390801-39-5P 390801-40-8P 390801-41-9P  
390801-42-0P 390801-43-1P 390801-44-2P 390801-45-3P 390801-46-4P  
390801-47-5P 390801-48-6P 390801-49-7P 390801-50-0P 390801-51-1P  
390801-52-2P 390801-53-3P 390801-54-4P 390801-55-5P 390801-56-6P  
390801-57-7P 390801-59-9P 390801-61-3P 390801-63-5P 390801-65-7P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(emitter layers for org. **EL** devices)

IT 65181-78-4 124729-98-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(hole injection and transport layer; org. **EL** devices with emitter layers contg. benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT 390429-96-6 390429-98-8 390430-00-9  
390430-02-1 390430-04-3 390430-06-5  
390430-08-7 390430-09-8 390430-11-2  
390430-13-4 390430-15-6 390430-17-8  
390430-19-0 390430-21-4 390430-22-5  
390430-24-7 390430-26-9 390430-27-0  
390430-29-2 390430-31-6 390430-33-8  
390430-35-0 390430-37-2 390430-39-4  
390430-41-8 390430-43-0 390430-45-2  
390430-47-4 390430-49-6 390430-51-0 390430-53-2 390430-55-4 390430-57-6  
390430-59-8 390430-61-2 390430-63-4  
390430-65-6 390430-67-8 390430-69-0  
390430-71-4 390430-73-6 390430-75-8  
390430-77-0 390430-79-2 390430-81-6

390430-82-7 390430-83-8 390430-85-0

390430-86-1 390430-88-3

RL: RCT (Reactant); RACT (Reactant or reagent)

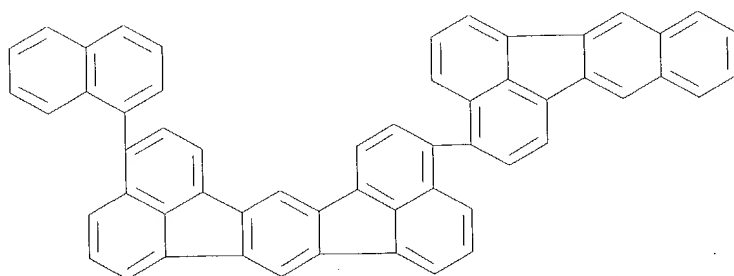
(org. **EL** devices with emitter layers contg.benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene  
derivs. prepd. from)

IT 390429-96-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(org. **EL** devices with emitter layers contg.benzo[5,6]indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene  
derivs. prepd. from)

RN 390429-96-6 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3-benzo[k]fluoranthene-3-yl-11-(1-  
naphthalenyl)- (9CI) (CA INDEX NAME)

L7 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:69656 HCAPLUS

DOCUMENT NUMBER: 136:126321

TITLE: Indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-  
c',d']diperylene derivatives and organic**electroluminescent** devices containing the same  
Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 63 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

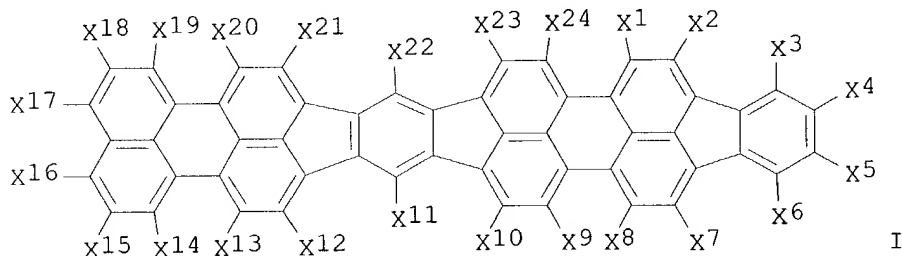
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002025772	A2	20020125	JP 2000-206281	20000707

OTHER SOURCE(S): MARPAT 136:126321  
GI



AB The org. **EL** devices have a pair of electrodes and in between, .gtoreq.1 layers, maybe emitter layers, contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs., which may be shown as I (X1-X24 = H, halogen, alkyl, alkoxy, aryl). The I-contg. layer may further contain luminescent organometal complexes and triarylamine derivs. The device may further have a hole injection and transport layer and an electron injection and transport layer between the electrodes. The device have high luminescent efficiency and high brightness.

IC ICM H05B033-14

ICS C07C013-62; C07C025-22; C07C043-20; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 74

ST org **electroluminescent** device emitter indenoindacenodiperylene deriv

IT Polycyclic compounds

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(arom. hydrocarbons; org. **EL** devices with emitter layers contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT Amines, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(aryl, tertiary, emitter layer contg.; org. **EL** devices with emitter layers contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT **Electroluminescent** devices

(org.; org. **EL** devices contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs. in emitter layers)

IT Aromatic hydrocarbons, uses

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polycyclic; org. **EL** devices with emitter layers contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT 2085-33-8 138372-67-5 150405-69-9, 3-(4'-tert-Butylphenyl)-4-phenyl-5-(4''-biphenyl)-1,2,4-triazole

RL: TEM (Technical or engineered material use); USES (Uses)

(electron injection and transport layer; org. **EL** devices with emitter layers contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.)

IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene 24601-13-6,

Bis(2-methyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2-methyl-8-

quinolinolato)aluminum 38215-36-0, Coumarin 6 146162-48-3,

Bis(2,4-dimethyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2,4-dimethyl-8-quinolinolato)aluminum 146162-54-1

RL: TEM (Technical or engineered material use); USES (Uses)

(emitter layer contg.; org. **EL** devices with emitter layers

contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene  
derivs.)

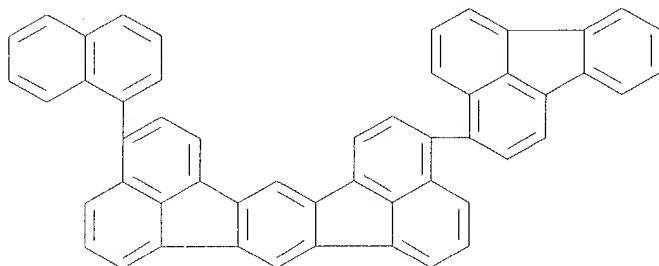
IT 390766-94-6P 390766-95-7P 390766-96-8P 390766-97-9P 390766-98-0P  
390766-99-1P 390767-00-7P 390767-01-8P 390767-02-9P 390767-03-0P  
390767-04-1P 390767-05-2P 390767-06-3P 390767-07-4P 390767-08-5P  
390767-09-6P 390767-10-9P 390767-12-1P 390767-14-3P 390767-16-5P  
390767-18-7P 390767-20-1P 390767-22-3P 390767-24-5P 390767-26-7P  
390767-28-9P 390767-30-3P 390767-32-5P 390767-34-7P 390767-36-9P  
390767-38-1P 390767-40-5P 390767-42-7P 390767-44-9P 390767-46-1P  
390767-48-3P 390767-50-7P 390767-52-9P 390767-54-1P 390767-56-3P  
390767-58-5P 390767-60-9P 390767-62-1P 390767-65-4P 390767-67-6P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(emitter layers for org. **EL** devices)

IT 65181-78-4 124729-98-2  
RL: TEM (Technical or engineered material use); USES (Uses)  
(hole injection and transport layer; org. **EL** devices with  
emitter layers contg. indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-  
c',d']diperylene derivs.)

IT 390767-71-2 390767-73-4 390767-75-6  
390767-76-7 390767-78-9 390767-80-3  
390767-82-5 390767-84-7 390767-86-9  
390767-88-1 390767-90-5 390767-92-7  
390767-94-9 390767-96-1 390767-98-3  
390768-03-3 390768-05-5 390768-07-7  
390768-09-9 390768-10-2 390768-11-3  
390768-13-5 390768-15-7 390768-18-0  
390768-19-1 390768-21-5 390768-23-7  
390768-25-9 390768-27-1 390768-29-3  
390768-31-7 390768-33-9 390768-35-1  
390768-37-3 390768-39-5 390768-41-9  
390768-43-1 390768-45-3 390768-47-5  
390768-49-7 390768-51-1 390768-53-3  
390768-55-5 390768-57-7 390768-58-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(org. **EL** devices with emitter layers contg.  
indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.  
prepd. from)

IT 390767-71-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(org. **EL** devices with emitter layers contg.  
indeno[1,2,3-lm]-s-indaceno[1,2,3-cd:5,6,7-c',d']diperylene derivs.  
prepd. from)

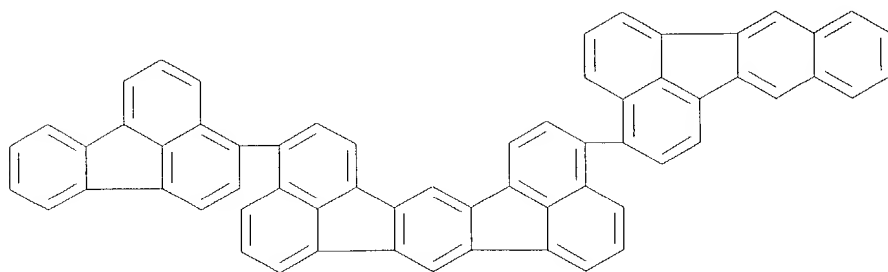
RN 390767-71-2 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3-(3-fluoranthenyl)-11-(1-naphthalenyl)-  
(9CI) (CA INDEX NAME)



L7 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:919245 HCAPLUS  
DOCUMENT NUMBER: 136:45444  
TITLE: Benzofluoranthenylacenaphthofluoranthene derivatives  
and organic **electroluminescent** devices using  
them  
INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
Masakatsu  
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 70 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
	JP 2001351784	A2	20011221	JP 2000-168902	20000606
OTHER SOURCE(S):	MARPAT 136:45444				
AB	The invention relates to an org. <b>electroluminescent</b> device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 3-(benzo(k)fluoranthene-3'-yl)-11-(3'-fluoranthenyl)acenaphtho(1,2-k)fluoranthene derivs..				
IC	ICM H05B033-14 ICS C07C013-62; C07C025-22; C07C043-21; C09K011-06				
CC	73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties) Section cross-reference(s): 25				
ST	<b>electroluminescent</b> device benzofluoranthenyl acenaphthofluoranthene deriv				
IT	Hydrocarbons, uses RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses) (for org. <b>electroluminescent</b> devices)				
IT	<b>Electroluminescent</b> devices (novel benzofluoranthenylacenaphthofluoranthene derivs. for)				
IT	Fluorescent substances (novel benzofluoranthenylacenaphthofluoranthene derivs. for org. <b>electroluminescent</b> devices)				
IT	1450-63-1 RL: DEV (Device component use); USES (Uses) (blue light-emitting component; novel benzofluoranthenylacenaphthofluoranthene derivs. for org. <b>electroluminescent</b> devices)				
IT	38215-36-0 RL: DEV (Device component use); USES (Uses) (green light-emitting component; novel benzofluoranthenylacenaphthofluoranthene derivs. for org. <b>electroluminescent</b> devices)				
IT	65181-78-4 RL: DEV (Device component use); USES (Uses) (hole injection/transport layer; novel benzofluoranthenylacenaphthofluoranthene derivs. for org. <b>electroluminescent</b> devices)				
IT	24601-13-6 138372-67-5 146162-48-3 146162-54-1 RL: DEV (Device component use); USES (Uses) (light-emitting layer contg.; novel benzofluoranthenylacenaphthofluoranthene derivs. for org. <b>electroluminescent</b> devices)				
IT	2085-33-8 25067-59-8 124729-98-2 150405-69-9 RL: DEV (Device component use); USES (Uses) (novel benzofluoranthenylacenaphthofluoranthene derivs. for org.				

electroluminescent devices)  
IT 380613-24-1DP, derivs. 380613-24-1P 380613-68-3P  
380613-69-4P 380613-70-7P 380613-71-8P  
380613-72-9P 380613-73-0P 380613-74-1P  
380613-75-2P 380613-76-3P 380613-77-4P  
380613-78-5P 380613-79-6P 380613-80-9P  
380613-81-0P 380613-82-1P 380613-83-2P  
380613-84-3P 380613-85-4P 380613-86-5P  
380613-87-6P 380613-88-7P 380613-89-8P  
380613-90-1P 380613-91-2P 380613-92-3P  
380613-93-4P 380613-94-5P 380613-95-6P  
380613-96-7P 380613-97-8P 380613-98-9P  
380613-99-0P 380614-00-6P 380614-01-7P  
380614-02-8P 380614-03-9P 380614-04-0P  
380614-05-1P 380614-06-2P 380614-07-3P  
380614-08-4P 380614-09-5P 380614-10-8P  
380614-11-9P 380614-12-0P 380614-13-1P  
380614-14-2P 380614-15-3P 380614-16-4P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel benzofluoranthenylacenaphthofluoranthene derivs. for org.  
electroluminescent devices)  
IT 276249-57-1 276249-59-3 278599-87-4 278599-88-5 278599-89-6  
359434-86-9 359434-87-0 359434-92-7 359434-93-8 359434-95-0  
359434-98-3 359435-00-0 359435-01-1 359435-03-3 359435-05-5  
359435-07-7 359435-09-9 359435-10-2 359435-12-4 359435-15-7  
359435-16-8 359435-17-9 373635-01-9 373635-04-2 373635-06-4  
373635-13-3 373635-22-4 373635-24-6 373635-29-1 373635-31-5  
373635-33-7 373635-37-1 373635-41-7 373635-45-1 380613-25-2  
380613-26-3 380613-27-4 380613-28-5  
380613-29-6 380613-30-9 380613-31-0  
380613-32-1 380613-33-2 380613-34-3  
380613-35-4 380613-36-5 380613-37-6  
380613-38-7 380613-39-8 380613-40-1  
380613-41-2 380613-42-3 380613-43-4  
380613-44-5 380613-45-6 380613-46-7  
380613-47-8 380613-48-9 380613-49-0  
380613-50-3 380613-51-4 380613-52-5  
380613-53-6 380613-54-7 380613-55-8  
380613-56-9 380613-57-0 380613-58-1  
380613-59-2 380613-60-5 380613-61-6  
380613-62-7 380613-63-8 380613-64-9  
380613-65-0 380613-66-1 380613-67-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel benzofluoranthenylacenaphthofluoranthene derivs. for org.  
electroluminescent devices)  
IT 380613-24-1DP, derivs.  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel benzofluoranthenylacenaphthofluoranthene derivs. for org.  
electroluminescent devices)  
RN 380613-24-1 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3-benzo[k]fluoranthene-3-yl-11-(3-  
fluoranthenyl)- (9CI) (CA INDEX NAME)



L7 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:840805 HCAPLUS

DOCUMENT NUMBER: 135:364355

TITLE: Difluoranthenylacenaphthofluoranthene derivatives and organic **electroluminescent** devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 2001319784	A2	20011116	JP 2000-139963	20000512

OTHER SOURCE(S): MARPAT 135:364355

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 3,11-di(3'-fluoranthenyl)acenaphtho[1,2-k]fluoranthene derivs..

IC ICM H05B033-14  
ICS C07C013-62; C07C013-66; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25

ST difluoranthenylacenaphthofluoranthene deriv **electroluminescent** device

IT Hydrocarbons, uses  
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(for org. **electroluminescent** devices)

IT **Electroluminescent** devices  
(novel difluoranthenylacenaphthofluoranthene derivs. for)

IT Fluorescent substances  
(novel difluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

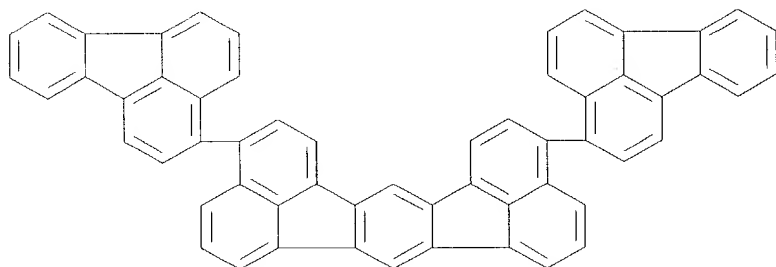
IT 1450-63-1  
RL: DEV (Device component use); USES (Uses)  
(blue light-emitting component; novel difluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green light-emitting component; novel difluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)



thene derivs. for org. **electroluminescent** devices)  
IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel difluoranthenylacenaphthofluoran  
thene derivs. for org. **electroluminescent** devices)  
IT 24601-13-6 138372-67-5 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel difluoranthenylacenaphthofluoranthe  
ne derivs. for org. **electroluminescent** devices)  
IT 2085-33-8 25067-59-8 124729-98-2  
RL: DEV (Device component use); USES (Uses)  
(novel difluoranthenylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT 372524-91-9DP, derivs. 372524-91-9P 372524-92-0P  
372524-93-1P 372524-94-2P 372524-95-3P  
372524-96-4P 372524-97-5P 372524-98-6P  
372524-99-7P 372525-00-3P 372525-01-4P  
372525-02-5P 372525-03-6P 372525-04-7P  
372525-05-8P 372525-06-9P 372525-07-0P  
372525-08-1P 372525-09-2P 372525-10-5P  
372525-11-6P 372525-12-7P 372525-13-8P  
372525-14-9P 372525-15-0P 372525-16-1P  
372525-17-2P 372525-18-3P 372525-19-4P  
372525-20-7P 372525-21-8P 372525-22-9P  
372525-23-0P 372525-24-1P 372525-25-2P  
372525-26-3P 372525-27-4P 372525-28-5P  
372525-29-6P 372525-30-9P 372525-31-0P  
372525-32-1P 372525-33-2P 372525-34-3P  
372525-35-4P 372525-36-5P 372525-37-6P  
372525-38-7P 372525-39-8P 372525-40-1P  
372525-41-2P 372525-42-3P 372525-43-4P  
372525-44-5P 372525-45-6P 372525-46-7P  
372525-47-8P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel difluoranthenylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT 131435-48-8 359012-63-8 359012-64-9 359012-71-8  
359012-72-9 359012-73-0 359012-74-1 359012-75-2 359012-79-6  
359012-80-9 359012-82-1 359012-83-2 359012-84-3 359012-88-7  
359012-89-8 359012-90-1 359012-92-3 359012-94-5 359012-95-6  
359012-99-0 359013-01-7 370083-81-1 370083-86-6 370083-87-7  
370083-89-9 370083-90-2 370083-91-3 370083-95-7 370083-96-8  
370084-22-3 370084-28-9 370084-29-0 370084-30-3 370084-32-5  
370084-33-6 370084-34-7 370084-41-6 370084-55-2 370084-56-3  
370084-58-5 370084-59-6 370084-60-9 370084-68-7 370084-82-5  
370098-12-7 370098-12-7D, derivs. 372521-72-7  
372521-73-8 372521-74-9 372521-76-1  
372521-77-2 372521-79-4 372521-80-7  
372524-85-1 372524-86-2 372524-87-3  
372524-88-4 372524-89-5 372524-90-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel difluoranthenylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
IT 372524-91-9DP, derivs.  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel difluoranthenylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)  
RN 372524-91-9 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3,11-di-3-fluoranthenyl- (9CI) (CA INDEX NAME)



L7 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:840804 HCAPLUS

DOCUMENT NUMBER: 135:364354

TITLE: Dinaphthylacenaphthofluoranthene derivatives and organic **electroluminescent** devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001319783	A2	20011116	JP 2000-137195	20000510

OTHER SOURCE(S): MARPAT 135:364354

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 3,11-di(1'-naphthyl)acenaphtho[1,2-k]fluoranthene derivs..

IC ICM H05B033-14

ICS C07C013-62; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

ST **electroluminescent** device dinaphthylacenaphthofluoranthene deriv

IT Hydrocarbons, uses

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(for org. **electroluminescent** devices)

IT **Electroluminescent** devices

(novel dinaphthylacenaphthofluoranthene derivs. for)

IT Fluorescent substances

(novel dinaphthylacenaphthofluoranthene derivs. for org.

**electroluminescent** devices)

IT 1450-63-1

RL: DEV (Device component use); USES (Uses)

(blue light-emitting component; novel dinaphthylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 38215-36-0

RL: DEV (Device component use); USES (Uses)  
(green light-emitting component; novel dinaphthylacenaphthofluoranthene  
derivs. for org. **electroluminescent** devices)

IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel dinaphthylacenaphthofluoranthene  
derivs. for org. **electroluminescent** devices)

IT 24601-13-6 138372-67-5 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel dinaphthylacenaphthofluoranthene  
derivs. for org. **electroluminescent** devices)

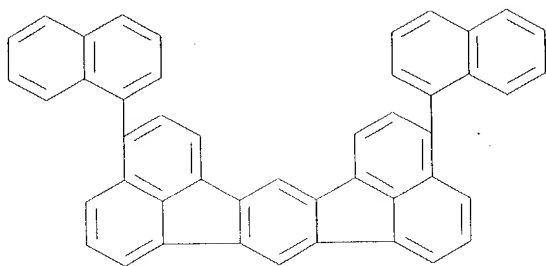
IT 2085-33-8 25067-59-8 124729-98-2 150405-69-9  
RL: DEV (Device component use); USES (Uses)  
(novel dinaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)

IT 372522-03-7DP, derivs. 372522-03-7P 372522-04-8P  
372522-05-9P 372522-06-0P 372522-07-1P  
372522-08-2P 372522-09-3P 372522-10-6P  
372522-11-7P 372522-12-8P 372522-13-9P  
372522-14-0P 372522-15-1P 372522-16-2P  
372522-17-3P 372522-18-4P 372522-19-5P  
372522-20-8P 372522-21-9P 372522-22-0P  
372522-23-1P 372522-24-2P 372522-26-4P  
372522-28-6P 372522-30-0P 372522-32-2P  
372522-34-4P 372522-35-5P 372522-36-6P  
372522-37-7P 372522-38-8P 372522-39-9P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel dinaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)

IT 207-02-3D, Acenaphtho[1,2-k]fluoranthene, derivs. 13922-41-3  
13922-41-3D, derivs. 131435-48-8 370098-12-7  
372521-72-7 372521-73-8 372521-74-9  
372521-75-0 372521-76-1 372521-77-2  
372521-78-3 372521-79-4 372521-80-7  
372521-81-8 372521-82-9 372521-83-0 372521-84-1 372521-85-2  
372521-86-3 372521-87-4 372521-88-5 372521-89-6 372521-90-9  
372521-91-0 372521-92-1 372521-93-2 372521-94-3 372521-95-4  
372521-96-5 372521-97-6 372521-98-7 372521-99-8 372522-00-4  
372522-01-5 372522-02-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel dinaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)

IT 372522-03-7DP, derivs.  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel dinaphthylacenaphthofluoranthene derivs. for org.  
**electroluminescent** devices)

RN 372522-03-7 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3,11-di-1-naphthalenyl- (9CI) (CA INDEX  
NAME)



L7 ANSWER 12 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:837247 HCAPLUS

DOCUMENT NUMBER: 135:378539

TITLE: Bisbenzo[k]fluorantheneacenaphthofluoranethene derivatives and organic **electroluminescent** devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka, Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 67 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001319785	A2	20011116	JP 2000-139964	20000512

OTHER SOURCE(S): MARPAT 135:378539

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 3,11-bis(benzo[k]fluoranthene-3'-yl)acenaphtho[1,2-k]fluoranthene derivs..

IC ICM H05B033-14

ICS C07C013-62; C07C025-22; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25

ST bisbenzofluoranthene acenaphthofluoranethene deriv **electroluminescent** device

IT Hydrocarbons, uses

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
(for org. **electroluminescent** devices)

IT **Electroluminescent** devices

(novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for)

IT Fluorescent substances

(novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 1450-63-1

RL: DEV (Device component use); USES (Uses)

(blue light-emitting component; novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 38215-36-0

RL: DEV (Device component use); USES (Uses)

(green light-emitting component; novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 24601-13-6 138372-67-5 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

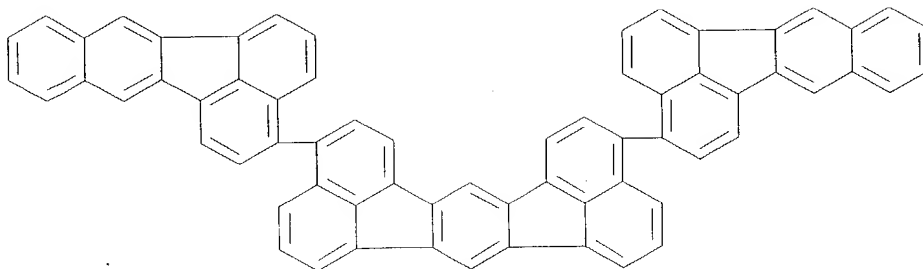
IT 2085-33-8 25067-59-8 124729-98-2 150405-69-9  
RL: DEV (Device component use); USES (Uses)  
(novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 373635-49-5DP, derivs. 373635-49-5P 373635-52-0P  
373635-54-2P 373635-56-4P 373635-58-6P  
373635-60-0P 373635-62-2P 373635-64-4P  
373635-66-6P 373635-68-8P 373635-70-2P  
373635-72-4P 373635-74-6P 373635-76-8P  
373635-78-0P 373635-80-4P 373635-82-6P  
373635-84-8P 373635-86-0P 373635-88-2P  
373635-90-6P 373635-92-8P 373635-94-0P  
373635-96-2P 373635-98-4P 373636-00-1P  
373636-02-3P 373636-04-5P 373636-06-7P  
373636-08-9P 373636-10-3P 373636-12-5P  
373636-14-7P 373636-16-9P 373636-18-1P  
373636-20-5P 373636-22-7P 373636-24-9P  
373636-26-1P 373636-29-4P 373636-31-8P  
373636-33-0P 373636-35-2P 373636-37-4P  
373636-39-6P 373636-41-0P 373636-43-2P  
373636-45-4P 373636-47-6P 373636-49-8P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 131435-48-8 276249-57-1 276249-59-3 278599-87-4  
278599-88-5 278599-89-6 359434-86-9 359434-87-0 359434-89-2  
359434-89-2D, derivs. 359434-92-7 359434-93-8 359434-95-0  
359434-98-3 359435-00-0 359435-01-1 359435-03-3 359435-05-5  
359435-07-7 359435-09-9 359435-10-2 359435-12-4 359435-15-7  
359435-16-8 359435-17-9 370098-12-7 370098-12-7D,  
derivs. 372521-72-7 372521-73-8 372521-74-9  
372521-76-1 372521-77-2 372521-79-4  
372521-80-7 372524-86-2 372524-87-3  
372524-88-4 373634-91-4 373634-94-7  
373635-01-9 373635-04-2 373635-06-4 373635-13-3 373635-22-4  
373635-24-6 373635-29-1 373635-31-5 373635-33-7 373635-37-1  
373635-41-7 373635-45-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

IT 373635-49-5DP, derivs.  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(novel bisbenzo[k]fluorantheneacenaphthofluoranethene derivs. for org. **electroluminescent** devices)

RN 373635-49-5 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3,11-bis(benzo[k]fluoranthen-3-yl)- (9CI)  
(CA INDEX NAME)



L7 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2001:796641 HCAPLUS  
 DOCUMENT NUMBER: 135:336769  
 TITLE: Fluoranthenylacenaphthofluoranthene derivatives and  
 organic **electroluminescent** devices using  
 them  
 INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
 Masakatsu  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 63 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001307883	A2	20011102	JP 2000-122667	20000424

OTHER SOURCE(S): MARPAT 135:336769

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 3-(3'-fluoranthenyl)acenaphtho[1,2-k]fluoranthene derivs..

IC ICM H05B033-14  
 ICS C07C013-64; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25

ST **electroluminescent** device fluoranthenyl acenaphthofluoranthene

IT Hydrocarbons, uses  
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
 (for org. **electroluminescent** device)

IT **Electroluminescent** devices  
 (hydrocarbon compd. for)

IT Fluorescent substances  
 (hydrocarbon compd. for org. **electroluminescent** device)

IT 1450-63-1  
 RL: DEV (Device component use); USES (Uses)  
 (blue light-emitting component; novel fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 38215-36-0  
 RL: DEV (Device component use); USES (Uses)  
 (green light-emitting component; novel fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 65181-78-4

RL: DEV (Device component use); USES (Uses)

(hole injection/transport layer; novel fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 153390-84-2 256327-96-5 256328-01-5  
359012-63-8, Boronic acid, 3-fluoranthenyl- 359012-64-9, Boronic acid,  
9-methyl-3-fluoranthenyl- 359012-71-8 359012-72-9 359012-73-0  
359012-74-1 359012-75-2 359012-79-6 359012-80-9 359012-82-1  
359012-83-2 359012-84-3 359012-88-7 359012-89-8 359012-90-1  
359012-92-3 359012-94-5 359012-95-6 359012-99-0 359013-01-7  
367489-92-7 370082-67-0 370082-74-9  
370083-39-9 370083-81-1 370083-86-6 370083-87-7  
370083-88-8 370083-89-9 370083-90-2 370083-91-3 370083-95-7  
370083-96-8 370083-97-9 370083-98-0  
370084-00-7 370084-01-8 370084-02-9  
370084-22-3 370084-28-9 370084-29-0 370084-30-3 370084-31-4  
370084-32-5 370084-33-6 370084-34-7 370084-41-6 370084-55-2  
370084-56-3 370084-57-4 370084-58-5 370084-59-6 370084-60-9  
370084-63-2 370084-68-7 370084-82-5 370084-83-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(in prepn. of fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 24601-13-6 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

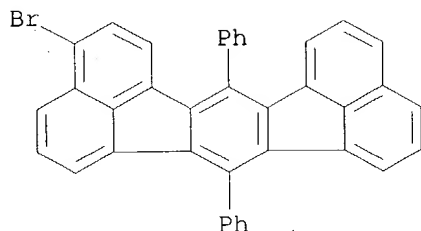
IT 2085-33-8, Alq3 25067-59-8, Poly(N-vinylcarbazole) 123847-85-8  
124729-98-2 138372-67-5 150405-69-9 367488-77-5  
367488-77-5D, derivs. 367488-78-6 367488-79-7  
367488-80-0 367488-81-1 367488-82-2  
367488-83-3 367488-84-4 367488-85-5  
367488-86-6 367488-87-7 367488-88-8  
367488-89-9 367488-90-2 367488-91-3  
367488-92-4 367488-93-5 367488-94-6  
367488-95-7 367488-96-8 367488-97-9  
367488-98-0 367488-99-1 367489-00-7  
367489-01-8 367489-02-9 367489-03-0  
367489-04-1 367489-05-2 367489-06-3  
367489-07-4 367489-08-5 367489-09-6  
367489-10-9 367489-11-0 367489-12-1  
367489-13-2 367489-14-3 367489-15-4  
367489-16-5 367489-17-6 367489-18-7  
367489-19-8 367489-20-1 367489-21-2  
367489-22-3 367489-23-4 367489-24-5  
367489-25-6 367489-26-7 367489-27-8  
367489-28-9 367489-29-0 367489-30-3  
367489-31-4 367489-32-5 367489-33-6

RL: DEV (Device component use); USES (Uses)

(novel fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

IT 153390-84-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in prepn. of fluoranthenylacenaphthofluoranthene derivs. for org. **electroluminescent** devices)

RN 153390-84-2 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3-bromo-7,14-diphenyl- (9CI) (CA INDEX NAME)



L7 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2001:796640 HCAPLUS  
 DOCUMENT NUMBER: 135:336768  
 TITLE: Bisbenzoindenoindacenodiperylene derivatives and organic **electroluminescent** devices using them  
 INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka, Masakatsu  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 73 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001307882	A2	20011102	JP 2000-118050	20000419

OTHER SOURCE(S): MARPAT 135:336768

AB The invention relates to an org. **electroluminescent** device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 bisbenzo[f]indeno[1,2,3-lm:1',2',3'-1'm']-s-indaceno[1,2,3-cd:5,6,7-c'd']diperylene derivs..

IC ICM H05B033-14  
 ICS C07C013-64; C07C025-22; C07C043-21; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25

ST **electroluminescent** device bisbenzoindenoindaceno diperylene deriv

IT Hydrocarbons, uses  
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)  
 (for org. **electroluminescent** devices)

IT **Electroluminescent** devices  
 (novel bisbenzoindenoindacenodiperylene derivs.)

IT Fluorescent substances  
 (novel bisbenzoindenoindacenodiperylene derivs. for org. **electroluminescent** devices)

IT 1450-63-1  
 RL: DEV (Device component use); USES (Uses)  
 (blue light-emitting component; novel bisbenzoindenoindacenodiperylene derivs. for org. **electroluminescent** devices)

IT 2085-33-8, Alq3  
 RL: DEV (Device component use); USES (Uses)  
 (electron injection/transport layer; novel



bisbenzoindenoindacenodiperylene derivs. for org.  
**electroluminescent** devices)

IT 38215-36-0  
RL: DEV (Device component use); USES (Uses)  
(green light-emitting component; novel bisbenzoindenoindacenodiperylene  
derivs. for org. **electroluminescent** devices)

IT 65181-78-4 123847-85-8  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel bisbenzoindenoindacenodiperylene  
derivs. for org. **electroluminescent** devices)

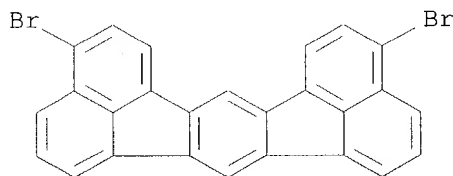
IT 359434-89-2 **370098-12-7**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in prepn. of bisbenzoindenoindacenodiperylene derivs. for org.  
**electroluminescent** devices)

IT 146162-48-3 146162-54-1  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel bisbenzoindenoindacenodiperylene  
derivs. for org. **electroluminescent** devices)

IT 25067-59-8 138372-67-5 370088-79-2 370088-79-2D, derivs.  
370096-84-7 370096-85-8 370096-86-9 370096-87-0 370096-88-1  
370096-89-2 370096-90-5 370096-91-6 370096-92-7 370096-93-8  
370096-94-9 370096-95-0 370096-96-1 370096-97-2 370096-98-3  
370097-00-0 370097-02-2 370097-04-4 370097-05-5 370097-07-7  
370097-09-9 370097-11-3 370097-14-6 370097-17-9 370097-21-5  
370097-27-1 370097-30-6 370097-34-0 370097-38-4 370097-44-2  
370097-48-6 370097-55-5 370097-58-8 370097-63-5 370097-68-0  
370097-71-5 370097-75-9 370097-78-2 370097-80-6 370097-82-8  
370097-84-0 370097-86-2 370097-88-4 370097-90-8 370097-91-9  
370097-96-4 370097-97-5 370098-00-3 370098-05-8  
RL: DEV (Device component use); USES (Uses)  
(novel bisbenzoindenoindacenodiperylene derivs. for org.  
**electroluminescent** devices)

IT **370098-12-7**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in prepn. of bisbenzoindenoindacenodiperylene derivs. for org.  
**electroluminescent** devices)

RN 370098-12-7 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3,11-dibromo- (9CI) (CA INDEX NAME)



L7 ANSWER 15 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 2001:796639 HCAPLUS  
DOCUMENT NUMBER: 135:336767  
TITLE: Diindenoindacenodiperylene derivatives and organic  
**electroluminescent** devices using them  
INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
Masakatsu  
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 67 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent

LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 2001307881	A2	20011102	JP 2000-118049	20000419
OTHER SOURCE(S):	MARPAT 135:336767				
AB	The invention relates to an org. <b>electroluminescent</b> device comprising a pair of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 diindeno[1,2,3-lm:1',2',3'-1'm']-s-indaceno[1,2,3-cd:5,6,7-c'd']diperylene derivs..				
IC	ICM H05B033-14				
	ICS C07C013-64; C07C043-21; C09K011-06				
CC	73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)				
	Section cross-reference(s): 25				
ST	<b>electroluminescent</b> device diindenoindaceno diperylene deriv				
IT	Hydrocarbons, uses				
	RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)				
	(for org. <b>electroluminescent</b> devices)				
IT	<b>Electroluminescent</b> devices				
	(novel diindenoindacenodiperylene derivs. for)				
IT	Fluorescent substances				
	(novel diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	1450-63-1				
	RL: DEV (Device component use); USES (Uses)				
	(blue light-emitting component; novel diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	2085-33-8, Alq3				
	RL: DEV (Device component use); USES (Uses)				
	(electron injection/transport layer; novel diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	38215-36-0				
	RL: DEV (Device component use); USES (Uses)				
	(green light-emitting component; novel diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	65181-78-4 124729-98-2				
	RL: DEV (Device component use); USES (Uses)				
	(hole injection/transport layer; novel diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	359012-63-8 370098-12-7				
	RL: RCT (Reactant); RACT (Reactant or reagent)				
	(in prepn. of diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	24601-13-6 146162-54-1				
	RL: DEV (Device component use); USES (Uses)				
	(light-emitting layer contg.; novel diindenoindacenodiperylene derivs. for org. <b>electroluminescent</b> devices)				
IT	25067-59-8	138372-67-5	150405-69-9	370562-49-5	370562-49-5D,
	derivs.	370562-50-8	370562-51-9	370562-52-0	370562-53-1
	370562-54-2	370562-55-3	370562-56-4	370562-57-5	370562-58-6
	370562-59-7	370562-60-0	370562-61-1	370562-62-2	370562-63-3
	370562-64-4	370562-65-5	370562-66-6	370562-67-7	370562-68-8
	370562-69-9	370562-71-3	370562-72-4	370562-73-5	370562-75-7
	370562-76-8	370562-77-9	370562-78-0	370562-79-1	370562-80-4
	370562-81-5	370562-82-6	370562-84-8	370562-86-0	370562-88-2
	370562-91-7	370562-94-0	370562-97-3	370563-00-1	370563-04-5

370563-09-0 370563-13-6 370563-17-0 370563-21-6 370563-26-1  
370563-30-7 370563-34-1 370563-38-5 370563-43-2 370563-47-6  
370563-51-2 370563-55-6 370563-59-0 370563-65-8 370563-71-6  
370563-76-1 370563-82-9

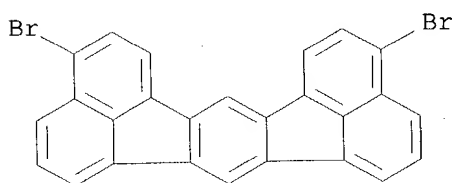
RL: DEV (Device component use); USES (Uses)  
(novel diindenoindacenodiperylene derivs. for org.  
**electroluminescent** devices)

IT 370098-12-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
(in prepn. of diindenoindacenodiperylene derivs. for org.  
**electroluminescent** devices)

RN 370098-12-7 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3,11-dibromo- (9CI) (CA INDEX NAME)



L7 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:753050 HCAPLUS

DOCUMENT NUMBER: 135:325053

TITLE: Acenaphthoindenoindenoperylene derivatives and organic

**electroluminescent** devices using them

INVENTOR(S): Ishida, Tsutomu; Shimamura, Takehiko; Nakatsuka,  
Masakatsu

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 69 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

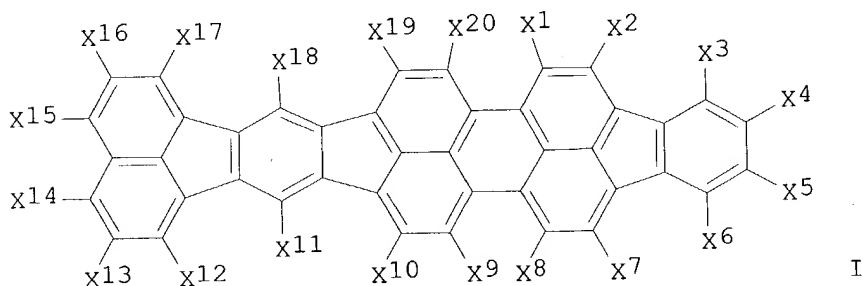
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001288126	A2	20011016	JP 2000-106319	20000407

OTHER SOURCE(S): MARPAT 135:325053

GI



AB Org. **electroluminescent** (EL) devices comprising a pair

of electrodes sandwiching .gtoreq.1 layer(s) contg. .gtoreq.1 kind of acenaphtho[1,2-f]indeno[1,2,3-cd]indeno[1',2',3'-lm]perylene derivs., and optionally contg. light-emitting organometallic complex or triarylamine derivs., are claimed. The sandwiched layer be the light-emitting layer. The devices may also have hole injection/transportation and/or electron injection/transportation layers. Preferably, the acenaphtho[1,2-f]indeno[1,2,3-cd]indeno[1',2',3'-lm]perylene deriv. is defined by Markush structure I (X1-20 = H, halogen, linear, branched, or cyclic alkyl, alkoxy, (un)substituted aryl). Also claimed is compd. I. **EL** devices with high luminance are obtained.

- IC ICM C07C013-62  
ICS C07C025-22; C07C043-21; C07C043-225; C09K011-06; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25, 74
- ST acenaphthoindenoindenoperylene deriv novel; **electroluminescent** device acenaphthoindenoindenoperylene deriv; **EL** device acenaphthoindenoindenoperylene deriv
- IT **Electroluminescent** devices  
(novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 1450-63-1, 1,1,4,4-Tetraphenyl-1,3-butadiene  
RL: DEV (Device component use); USES (Uses)  
(blue light-emitting component; novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 2085-33-8, Tris(8-quinolinolato)aluminum  
RL: DEV (Device component use); USES (Uses)  
(electron injection/transport layer; novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 38215-36-0, Coumarin 6  
RL: DEV (Device component use); USES (Uses)  
(green light-emitting component; novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 65181-78-4  
RL: DEV (Device component use); USES (Uses)  
(hole injection/transport layer; novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 24601-13-6, Bis(2-methyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2-methyl-8-quinolinolato)aluminum 123847-85-8 138372-67-5 146162-48-3,  
Bis(2,4-dimethyl-8-quinolinolato)aluminum-.mu.-oxo-bis(2,4-dimethyl-8-quinolinolato)aluminum 146162-49-4  
RL: DEV (Device component use); USES (Uses)  
(light-emitting layer contg.; novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 124729-98-2 150405-69-9, 3-(4'-tert-Butylphenyl)-4-phenyl-5-(4''-biphenyl)1,2,4-triazole  
RL: DEV (Device component use); USES (Uses)  
(novel acenaphthoindenoindenoperylene derivs. and their **electroluminescent** devices)
- IT 367489-34-7P 367489-35-8P 367489-36-9P 367489-37-0P 367489-38-1P  
367489-39-2P 367489-41-6P 367489-42-7P 367489-43-8P 367489-44-9P  
367489-45-0P 367489-46-1P 367489-47-2P 367489-48-3P 367489-49-4P  
367489-50-7P 367489-51-8P 367489-52-9P 367489-53-0P 367489-54-1P  
367489-55-2P 367489-56-3P 367489-57-4P 367489-58-5P 367489-59-6P  
367489-60-9P 367489-61-0P 367489-62-1P 367489-63-2P 367489-64-3P  
367489-65-4P 367489-66-5P 367489-67-6P 367489-68-7P 367489-69-8P  
367489-70-1P 367489-71-2P 367489-72-3P 367489-73-4P 367489-74-5P  
367489-75-6P 367489-76-7P 367489-77-8P 367489-78-9P 367489-79-0P  
367489-80-3P 367489-81-4P 367489-82-5P 367489-83-6P 367489-84-7P

367489-85-8P 367489-86-9P 367489-87-0P 367489-88-1P 367489-89-2P  
367489-90-5P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(novel acenaphthoindenoindenoperylene derivs. and their  
**electroluminescent** devices)

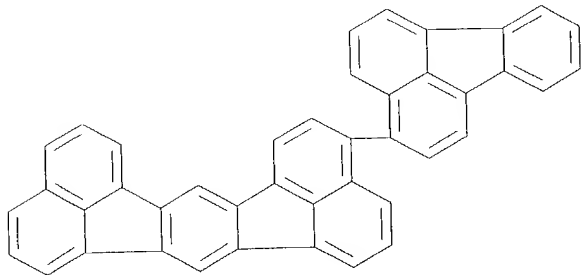
IT 367488-77-5P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
RACT (Reactant or reagent)  
(novel acenaphthoindenoindenoperylene derivs. and their  
**electroluminescent** devices)

IT 359012-63-8 367488-78-6 367488-79-7  
367488-80-0 367488-81-1 367488-82-2  
367488-83-3 367488-84-4 367488-85-5  
367488-86-6 367488-87-7 367488-88-8  
367488-89-9 367488-90-2 367488-91-3  
367488-92-4 367488-93-5 367488-94-6  
367488-95-7 367488-96-8 367488-97-9  
367488-98-0 367488-99-1 367489-00-7 36748  
9-01-8 367489-02-9 367489-03-0  
367489-04-1 367489-05-2 367489-06-3  
367489-07-4 367489-08-5 367489-09-6  
367489-10-9 367489-11-0 367489-12-1  
367489-13-2 367489-14-3 367489-15-4  
367489-16-5 367489-17-6 367489-18-7  
367489-19-8 367489-20-1 367489-21-2  
367489-22-3 367489-23-4 367489-24-5  
367489-25-6 367489-26-7 367489-27-8  
367489-28-9 367489-29-0 367489-30-3  
367489-31-4 367489-32-5 367489-33-6  
367489-92-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel acenaphthoindenoindenoperylene derivs. and their  
**electroluminescent** devices)

IT 367489-40-5P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(Novel acenaphthoindenoindenoperylene derivs. and their  
**electroluminescent** devices)

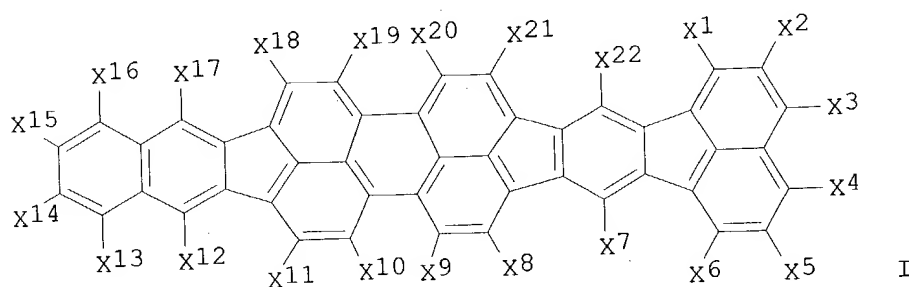
IT 367488-77-5P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
RACT (Reactant or reagent)  
(novel acenaphthoindenoindenoperylene derivs. and their  
**electroluminescent** devices)

RN 367488-77-5 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3-(3-fluoranthenyl)- (9CI) (CA INDEX NAME)



L7 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:77101 HCAPLUS  
 DOCUMENT NUMBER: 132:144218  
 TITLE: Perylene derivatives and high-luminance organic  
**electroluminescent** devices using them  
 INVENTOR(S): Nakatsuka, Masakatsu  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 113 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000034234	A2	20000202	JP 1998-200859	19980715
OTHER SOURCE(S): MARPAT 132:144218				
GI				



- AB The devices have .gtoreq.1 layer(s) contg. acenaphtho[1',2':5,6]indeno[1,2,3-cd]benzo[5,6]indeno[1',2',3'-lm]perylene derivs. between a pair of electrodes. The derivs. comprise I [X1-X22 = H, halo, (un)substituted alkyl, alkoxy, alkylthio, alkenyl, alkenyloxy, alkenylthio, aralkyl, aralkyloxy, aralkylthio, aryl, aryloxy, arylthio, or amino, cyano, OH, NO2, CO2R1, COR2, OCOR3; R1 = H, (un)substituted alkyl, alkenyl, aralkyl, aryl; R2 = H, (un)substituted alkyl, alkenyl, aralkyl, or aryl, amino; R3 = (un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X22 may form (un)substituted alicyclic group].
- IC ICM C07C013-62  
 ICS C07C022-08; C07C025-22; C07C039-12; C07C043-21; C09K011-06; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25
- ST acenaphtho indeno benzo perylene **electroluminescent** device;  
 luminance improvement org **electroluminescent** device  
 acenaphthoindenobenzoidenoperylene
- IT **Electroluminescent** devices  
 (acenaphthoindenobenzoidenoperylene derivs. for high-luminance org. **electroluminescent** devices)
- |                 |              |              |              |              |
|-----------------|--------------|--------------|--------------|--------------|
| IT 256514-88-2P | 256514-90-6P | 256514-91-7P | 256514-92-8P | 256514-93-9P |
| 256514-94-0P    | 256514-95-1P | 256514-96-2P | 256514-97-3P | 256514-98-4P |
| 256515-00-1P    | 256515-01-2P | 256515-02-3P | 256515-03-4P | 256515-04-5P |
| 256515-05-6P    | 256515-06-7P | 256515-07-8P | 256515-08-9P | 256515-09-0P |

256515-10-3P 256515-12-5P 256515-13-6P 256515-14-7P 256515-15-8P  
 256515-16-9P 256515-17-0P 256515-18-1P 256515-19-2P 256515-20-5P  
 256515-21-6P 256515-22-7P 256515-23-8P 256515-24-9P 256515-25-0P  
 256515-26-1P 256515-27-2P 256515-28-3P 256515-29-4P 256515-30-7P  
 256515-31-8P 256515-32-9P 256515-33-0P 256515-34-1P 256515-35-2P  
 256515-36-3P 256515-37-4P 256515-38-5P 256515-41-0P 256515-43-2P  
 256515-44-3P 256515-45-4P 256515-46-5P 256515-49-8P 256515-50-1P  
 256515-51-2P 256515-52-3P 256515-53-4P 256515-55-6P 256515-56-7P

RL: DEV (Device component use); PNU (Preparation, unclassified); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acenaphthoindenobenzoindeoperylene derivs. for high-luminance org.  
**electroluminescent** devices)

IT 591-50-4, Iodobenzene 153390-84-2 256515-57-8

256515-60-3 256515-61-4 256515-62-5  
 256515-63-6 256515-64-7 256515-65-8  
 256515-66-9 256515-67-0 256515-68-1  
 256515-69-2 256515-70-5 256515-71-6  
 256515-72-7 256515-73-8 256515-74-9  
 256515-75-0 256515-76-1 256515-77-2  
 256515-78-3 256515-79-4 256515-80-7  
 256515-81-8 256515-82-9 256515-83-0  
 256515-84-1 256515-85-2 256515-86-3  
 256515-87-4 256515-88-5 256515-89-6  
 256515-90-9 256515-91-0 256515-92-1  
 256515-93-2 256515-94-3 256515-95-4  
 256515-96-5 256515-97-6 256515-98-7  
 256515-99-8 256516-00-4 256516-01-5  
 256516-02-6 256516-03-7 256516-04-8  
 256516-05-9 256516-06-0 256516-07-1  
 256516-08-2 256516-09-3 256516-10-6  
 256516-11-7 256516-12-8 256516-13-9  
 256516-14-0 256516-15-1 256516-16-2  
 256516-17-3 256516-18-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acenaphthoindenobenzoindeoperylene derivs. for high-luminance org.  
**electroluminescent** devices)

IT 256515-54-5P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); RCT  
 (Reactant); TEM (Technical or engineered material use); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (prepn. and N-phenylation of; acenaphthoindenobenzoindeoperylene  
 derivs. for high-luminance org. **electroluminescent** devices)

IT 256515-47-6P 256515-48-7P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); RCT  
 (Reactant); TEM (Technical or engineered material use); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (prepn. and decarboxylation of; acenaphthoindenobenzoindeoperylene  
 derivs. for high-luminance org. **electroluminescent** devices)

IT 256514-99-5P 256515-40-9P 256515-42-1P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); RCT  
 (Reactant); TEM (Technical or engineered material use); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (prepn. and hydrolysis of; acenaphthoindenobenzoindeoperylene derivs.  
 for high-luminance org. **electroluminescent** devices)

IT 256515-11-4P 256515-39-6P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); RCT  
 (Reactant); TEM (Technical or engineered material use); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (prepn. and redn. of; acenaphthoindenobenzoindeoperylene derivs. for  
 high-luminance org. **electroluminescent** devices)

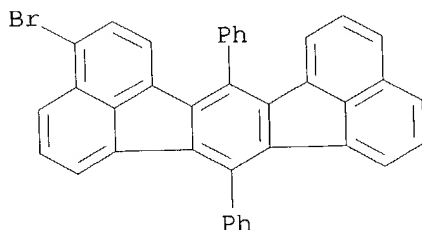
IT 256515-59-0P  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (prepn. and ring closure reaction of; acenaphthoindenobenzindenoperylene  
 ne derivs. for high-luminance org. **electroluminescent**  
 devices)

IT 256514-89-3P  
 RL: DEV (Device component use); PNU (Preparation, unclassified); RCT  
 (Reactant); TEM (Technical or engineered material use); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (prepn. and thioarylation of; acenaphthoindenobenzindenoperylene  
 derivs. for high-luminance org. **electroluminescent** devices)

IT 75-33-2, Isopropyl mercaptan 108-98-5, Phenyl mercaptan, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with perylene derivs.; acenaphthoindenobenzindenoperylene  
 derivs. for high-luminance org. **electroluminescent** devices)

IT 153390-84-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acenaphthoindenobenzindenoperylene derivs. for high-luminance org.  
**electroluminescent** devices)

RN 153390-84-2 HCAPLUS  
 CN Acenaphtho[1,2-k]fluoranthene, 3-bromo-7,14-diphenyl- (9CI) (CA INDEX  
 NAME)



L7 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:62604 HCAPLUS  
 DOCUMENT NUMBER: 132:130074  
 TITLE: Organic **electroluminescence** device having  
 3,3'-biacenaphtho[1,2-.kappa.]fluoranthene derivative  
 INVENTOR(S): Nakatsuka, Masakatsu; Kitamoto, Noriko  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 100 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000026325	A2	20000125	JP 1998-194430	19980709

AB The org. **electroluminescence** device has a layer contg.  
 3,3'-biacenaphtho[1,2-.kappa.]fluoranthene deriv. between a pair of  
 electrodes. The org. **electroluminescence** device provides the  
 bright luminescence.

IC ICM C07C013-62  
 ICS C07C022-04; C07C025-22; C07C025-24; C07C033-36; C07C039-12;



C07C043-168; C07C043-20; C07C047-546; C07C049-792; C07C063-46;  
C07C069-33; C07C069-76; C07C205-11; C07C211-50; C07C233-65;  
C07C255-52; C07C321-28; C09K011-06; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 24, 73

ST org **electroluminescence** device fluorethane

IT **Electroluminescent** devices  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluorethane deriv.)

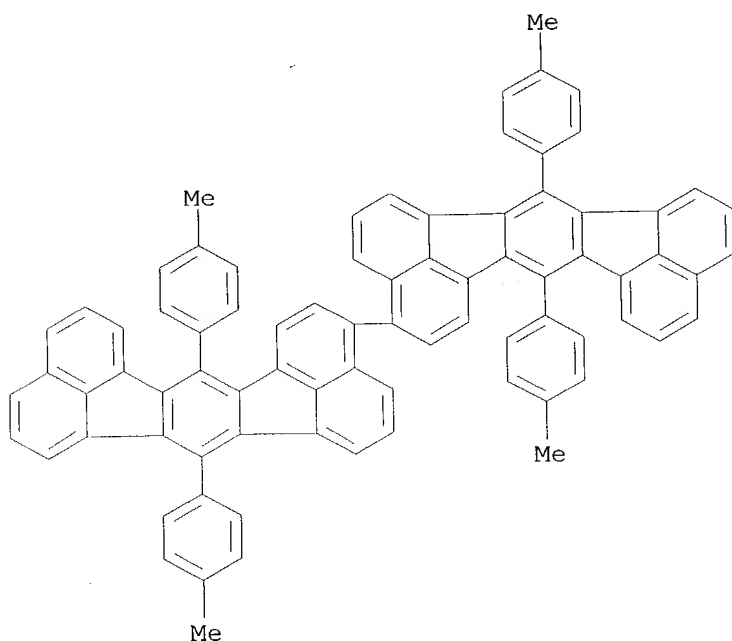
IT 256327-97-6P 256328-06-0P, 3,3'-Biacenaphtho[1,2-  
k]fluorethane 256328-07-1P 256328-08-2P  
256328-09-3P 256328-10-6P 256328-11-7P  
256328-12-8P 256328-13-9P 256328-14-0P  
256328-15-1P 256328-16-2P 256328-17-3P  
256328-18-4P 256328-19-5P 256328-20-8P  
256328-21-9P 256328-22-0P 256328-23-1P  
256328-24-2P 256328-25-3P 256328-26-4P  
256328-27-5P 256328-28-6P 256328-29-7P  
256328-30-0P 256328-31-1P 256328-32-2P  
256328-33-3P 256328-34-4P 256328-35-5P  
256328-36-6P 256328-37-7P 256328-38-8P 256328-39-9P  
256328-40-2P 256328-41-3P 256328-42-4P  
256328-43-5P 256328-44-6P 256328-45-7P  
256328-46-8P 256328-47-9P 256328-48-0P  
256328-49-1P 256328-50-4P 256328-51-5P  
256328-52-6P 256328-53-7P 256328-54-8P 256328-55-9P  
256328-56-0P 256328-57-1P 256328-58-2P  
256328-59-3P 256328-60-6P 256328-61-7P  
256328-62-8P 256328-63-9P 256328-64-0P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluorethane deriv.)

IT 624-31-7, 4-Iodotoluene 1310-58-3, Potassium hydroxide, reactions  
10486-08-5, Sodium 4-Methylphenylthiolate 20607-43-6, Isopropylmercaptan  
sodium salt 153390-84-2 256327-96-5  
256327-98-7 256327-99-8 256328-00-4  
256328-01-5 256328-02-6 256328-03-7  
256328-04-8 256328-05-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluorethane deriv.)

IT 256327-97-6P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluorethane deriv.)

RN 256327-97-6 HCAPLUS

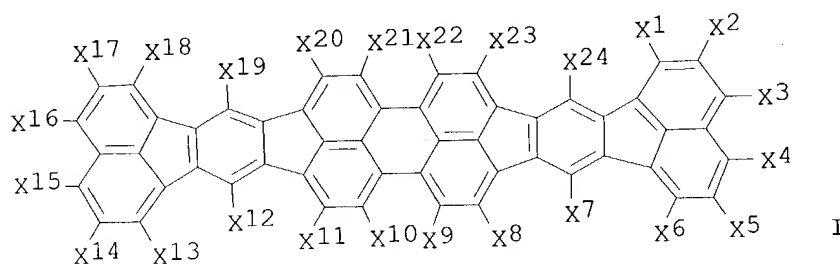
CN 3,3'-Biacenaphtho[1,2-k]fluorethane, 7,7',14,14'-tetrakis(4-methylphenyl)-  
(9CI) (CA INDEX NAME)



L7 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:59110 HCAPLUS  
 DOCUMENT NUMBER: 132:129799  
 TITLE: Perylene derivatives and high-luminance organic  
**electroluminescent** devices using them  
 INVENTOR(S): Nakatsuka, Masakatsu; Kitamoto, Noriko  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 101 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000026324	A2	20000125	JP 1998-187708	19980702

OTHER SOURCE(S): MARPAT 132:129799  
 GI



AB The devices have .gtoreq.1 layer(s) contg. bisacenaphto[1',2':5,6]indeno[1,2,3-cd:1',2',3'-lm]perylene derivs. between a pair of electrodes. The derivs. comprise I [X1-X24 = H, halo, (un)substituted alkyl, alkoxy, alkylthio, alkenyl, alkenyloxy, alkenylthio, aralkyl, aralkyloxy, aralkylthio, aryl, aryloxy, arylthio, or amino, cyano, OH, NO2, CO2R1, COR2, OCOR3; R1 = H, (un)substituted alkyl, alkenyl, aralkyl, aryl; R2 = H, (un)substituted alkyl, alkenyl, aralkyl, or aryl, amino; R3 = (un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X24 may form (un)substituted alicyclic group].

IC ICM C07C013-62  
ICS C07C022-04; C07C025-22; C07C043-174; C07C043-21; C07C043-215; C07C043-225; C07C043-275; C07C047-546; C07C063-49; C07C069-78; C07C205-06; C07C211-50; C07C211-54; C07C255-52; C07C321-28; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25

ST acenaphtho indeno perylene **electroluminescent** device; luminance improvement org **electroluminescent** device  
acenaphthoindenoperylene

IT **Electroluminescent** devices  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 2085-33-8 24601-13-6 123847-85-8 146162-48-3 146162-52-9 169224-62-8  
RL: DEV (Device component use); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 256329-34-7P 256329-36-9P 256330-85-5P 256333-36-5P 256333-46-7P  
256333-48-9P 256333-50-3P 256333-51-4P 256333-52-5P 256333-53-6P  
256333-56-9P 256333-58-1P 256333-59-2P  
RL: DEV (Device component use); IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 231632-01-2P 256329-38-1P 256329-40-5P 256329-42-7P 256329-43-8P  
256329-44-9P 256329-48-3P 256329-49-4P 256329-51-8P 256329-52-9P  
256329-54-1P 256329-60-9P 256330-81-1P 256330-83-3P 256330-84-4P  
256330-86-6P 256330-87-7P 256330-89-9P 256330-90-2P 256330-91-3P  
256330-92-4P 256330-93-5P 256330-94-6P 256330-95-7P 256330-96-8P  
256330-97-9P 256330-98-0P 256330-99-1P 256331-00-7P 256331-01-8P  
256331-02-9P 256331-03-0P 256331-04-1P 256331-05-2P 256331-07-4P  
256331-12-1P 256331-15-4P 256331-16-5P 256332-24-8P 256332-27-1P  
256332-28-2P 256332-29-3P 256332-31-7P 256332-77-1P 256332-78-2P  
256333-22-9P 256333-24-1P 256333-25-2P 256333-26-3P 256333-27-4P  
256333-28-5P 256333-33-2P 256333-34-3P 256333-38-7P 256333-40-1P  
256333-45-6P 256333-47-8P 256333-49-0P 256333-54-7P 256333-55-8P  
256333-57-0P 256334-57-3P 256334-58-4P 256334-59-5P 256334-60-8P  
256334-61-9P 256334-62-0P 256334-65-3P 256343-53-0P 256343-54-1P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 230636-45-0 256330-88-8  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 256327-97-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(bis(acenaphthoindeno)perylene derivs. for high-luminance org.  
**electroluminescent** devices)

IT 591-50-4, Iodobenzene 624-31-7, 4-Iodotoluene 10486-08-5 20607-43-6,  
Isopropylmercaptan sodium salt 256327-96-5 256328-08-2  
256328-09-3 256328-10-6 256328-11-7  
256328-12-8 256328-13-9 256328-14-0  
256328-15-1 256328-16-2 256328-17-3  
256328-18-4 256328-19-5 256328-26-4  
256328-27-5 256328-30-0 256328-31-1  
256328-32-2 256328-33-3 256328-34-4  
256328-35-5 256328-36-6 256328-37-7  
256328-39-9 256328-40-2 256328-41-3  
256328-42-4 256328-43-5 256328-44-6  
256328-45-7 256328-46-8 256328-47-9  
256328-48-0 256328-51-5 256328-52-6  
256328-58-2 256328-60-6 256328-61-7  
256328-62-8 256328-64-0 256335-10-1  
256335-11-2 256335-12-3 256335-13-4  
256335-32-7 256337-55-0 256337-68-5  
256337-69-6 256337-70-9 256337-73-2  
256337-74-3 256337-75-4 256337-77-6  
256337-78-7 256337-83-4 256342-76-4  
256342-77-5 256342-78-6 256342-79-7 256343-03-0  
256343-07-4 256343-08-5 256343-09-6 256343-10-9  
256343-14-3 256343-15-4 256343-55-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(bis(acenaphthoindeno)perylene derivs. for high-luminance org.  
**electroluminescent** devices)

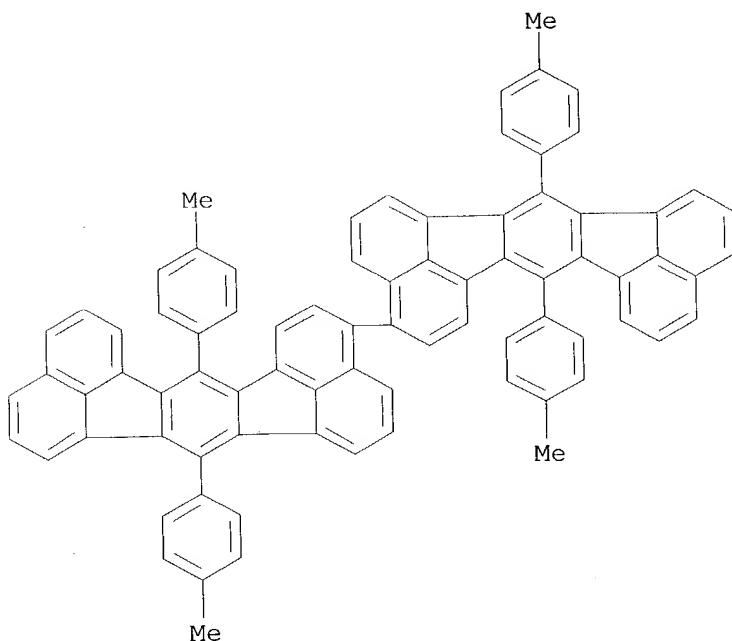
IT 256327-97-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(bis(acenaphthoindeno)perylene derivs. for high-luminance org.  
**electroluminescent** devices)

RN 256327-97-6 HCAPLUS

CN 3,3'-Biacenaphtho[1,2-k]fluoranthene, 7,7',14,14'-tetrakis(4-methylphenyl)-  
(9CI) (CA INDEX NAME)



L7 ANSWER 20 OF 22 HCAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1998:402871 HCAPLUS  
 DOCUMENT NUMBER: 129:87839  
 TITLE: Organic **electroluminescent** device containing  
 benzodiacenaphthylene derivative  
 INVENTOR(S): Nakatsuka, Masakatsu; Kitamoto, Noriko  
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10168445	A2	19980623	JP 1996-334097	19961213

OTHER SOURCE(S): MARPAT 129:87839

AB The device has .gtoreq.1 layer contg. .gtoreq.1 benzodiacenaphthylene deriv. between a pair of electrodes. The device shows high emission.

IC ICM C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device benzo diacenaphthylene; **EL** device benzo diacenaphthylene

IT **Electroluminescent** devices  
 (org. **electroluminescent** device contg. benzodiacenaphthylene deriv. in light-emitting layer)

IT 193-21-5, Benzo[1:2-a,3:4-a']diacenaphthylene 7213-61-8  
**7229-88-1 86997-76-4 148902-28-7** 209398-01-6  
 209398-02-7 209398-03-8 209398-04-9 209398-05-0 209398-06-1  
 209398-07-2 209398-08-3 209398-09-4 209398-10-7 **209398-11-8**

209398-12-9 209398-13-0 209398-14-1  
209398-15-2 209398-16-3

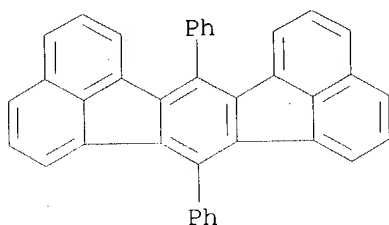
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescent** device contg. benzodiacenaphthylene  
deriv. in light-emitting layer)

IT 7229-88-1

RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescent** device contg. benzodiacenaphthylene  
deriv. in light-emitting layer)

RN 7229-88-1 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L7 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1987:127768 HCAPLUS

DOCUMENT NUMBER: 106:127768

TITLE: investigation of two radical intermediates in the  
anodic oxidation of 1,4-dihydropyridines by  
electrochemiluminescence

AUTHOR(S): Ludvik, Jiri; Volke, Jiri; Pragst, Fritz

CORPORATE SOURCE: J. Heyrovsky Inst. Phys. Chem. Electrochem.,  
Czechoslovak Acad. Sci., Prague, 118 40, Czech.

SOURCE: Journal of Electroanalytical Chemistry and Interfacial  
Electrochemistry (1986), 215(1-2), 179-90  
CODEN: JEIEBC; ISSN: 0022-0728

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The chemiluminescence generated in the anodic oxidn. of  
1,4-dihydropyridines (PyRH) in the presence of 9,10-diphenylanthracene  
(DPA) [1499-10-1] or of bis-[1,2,3-trimethyl-1,2-dihydrobenzimidazolyl-  
(2)] [94887-83-9] luminophor systems was investigated at a rotating Pt  
disk electrode and by cyclic voltammetry connected with luminescence  
intensity measurements in a 1:1 MeCN + toluene mixt. New findings on the  
**electroluminescence** of PyRH are reported; the cation radicals  
PyRH.bul.+ are the primary intermediates. The shape and the intensity of  
the luminescence-potential curves are discussed in terms of structure. If  
 $E_{1/2ox}(PyRH) < E_{1/2ox}(DPA)$ , the system PyRH/DPA is a practical example of  
the homogeneous redox catalysis of electrochem. reactions.

CC 72-2 (Electrochemistry)

Section cross-reference(s): 27, 73

IT 197-61-5, Rubicene 852-38-0 7229-88-1

RL: PRP (Properties)

(luminophor, dihydropyridine anodic oxidn. in presence of, radical  
intermediates in relation to)

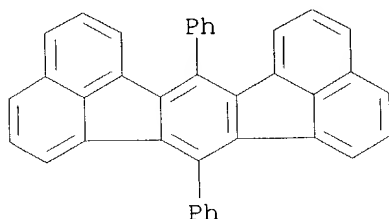
IT 7229-88-1

RL: PRP (Properties)

(luminophor, dihydropyridine anodic oxidn. in presence of, radical  
intermediates in relation to)

RN 7229-88-1 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L7 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1975:539203 HCAPLUS

DOCUMENT NUMBER: 83:139203

TITLE: Electrochemical formation of triplet states. III. Chemiluminescence of electron transfer between the radical anions of azo compounds and polycyclic aromatic hydrocarbons

AUTHOR(S): Pragst, Fritz

CORPORATE SOURCE: Sekt. Chem., Humboldt-Univ. Berlin, Berlin, E. Ger.

SOURCE: Z. Phys. Chem. (Leipzig) (1975), 256(2), 312-18

CODEN: ZPCLAH

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The electrochem. luminescence of solns. of a polycyclic aromatic hydrocarbon (I) and a dialkylaminoazobenzene (II) in Me<sub>2</sub>NCHO was studied by using the square-wave potential method. The obsd. emission resulted from the charge-transfer transition between the II radical cation and the I radical anion via a triplet mechanism. Similar emission due to electron transfer between the radical anion of unsubstituted azobenzene and I radical cations in MeCN was obsd. The triplet energy of azobenzene lies between 2.28 and 2.5 eV.

CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

Section cross-reference(s): 72

ST azobenzene polycyclic arom **electroluminescence**; electron transfer azobenzene polycyclic; luminescence electro azobenzene arom

IT Aromatic hydrocarbons

RL: PRP (Properties)

(**electroluminescence** of solns. contg. dialkylaminoazobenzenes and)

IT 197-61-5 198-55-0 218-01-9 517-51-1 1499-10-1 **7229-88-1**  
55087-79-1

RL: PRP (Properties)

(electrochemiluminescence of solns. contg. dialkylaminoazobenzenes and)

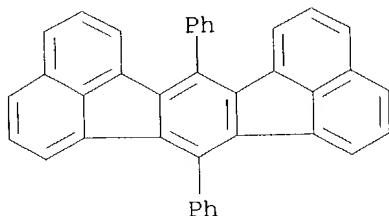
IT **7229-88-1**

RL: PRP (Properties)

(electrochemiluminescence of solns. contg. dialkylaminoazobenzenes and)

RN 7229-88-1 HCAPLUS

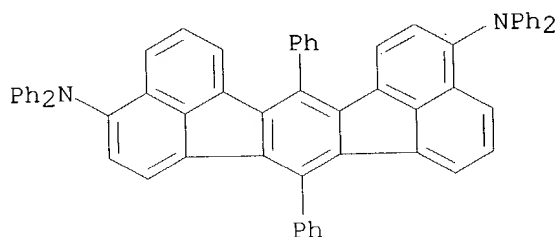
CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



=> d L8 1-8 cbib abs hitind fhitstr

L8 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
2002:505061 Document No. 137:70373 Organic **electroluminescent**  
device. Arakane, Takashi; Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu  
Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2002052904 A1 20020704, 48 pp.  
DESIGNATED STATES: W: CN, IN, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 2001-JP10789 20011210. PRIORITY: JP 2000-394152 20001226.  
AB The invention refers to an **electroluminescent** device wherein the  
luminescent layer contains at least one hole transport material and at  
least one electron transport material, and the energy gap of the hole  
transport material is less than the energy gap of the electron transport  
material, and the ionization energy of the hole transport material is less  
than or equal to the ionization energy of the electron transport material,  
in order to provide a high-efficiency device with long life.  
IC ICM H05B033-14  
ICS H05B033-22; C09K011-06  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
ST **electroluminescent** device energy gap hole electron transport  
ionization energy  
IT Electron transport  
Hole transport  
(material; org. **electroluminescence** device)  
IT Band gap  
**Electroluminescent** devices  
Ionization potential  
(org. **electroluminescence** device)  
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 205930-46-7  
**331965-27-6 364765-18-4**  
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescence** device)  
IT **331965-27-6**  
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescence** device)  
RN 331965-27-6 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-hexaphenyl-  
(9CI) (CA INDEX NAME)





L8 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
 2002:185253 Document No. 136:224030 Organic **electroluminescent** element. Arakane, Takashi; Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2002020693 A1 20020314, 44 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP7729 20010906. PRIORITY: JP 2000-271707 20000907.

AB The invention refers to an org. **electroluminescent** element comprising an anode layer, an org. luminescent layer, an inorg. compd. layer (or a layer contg. a reducible dopant), and a cathode layer, wherein the org. luminescent layer comprises an arom. amine compd. [Ar1Ar2N]pA, and/or an arom. amine compd. [Ar3Ar4N]qB[NAr5Ar6]r [A, B, Ar1-6 = C6-60 arom. contg. neither styryl nor alkenyl; and at least one of A, Ar1, Ar2 or one of B, Ar3-6 comprises a fused arom. ring with three or more rings; p, q, r = 1 - 6].

IC ICM C09K011-06  
 ICS H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device amine arom

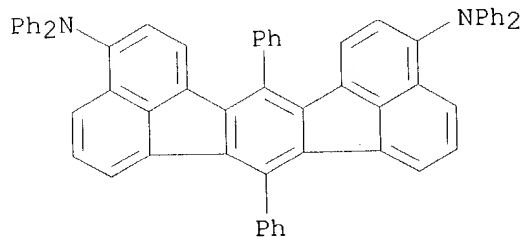
IT **Electroluminescent** devices  
 (org. **electroluminescent** element)

IT 7789-24-4, Lithium fluoride, uses 22441-13-0, Lithium mono(2,2,6,6-tetramethyl-3,5-heptanedionato) 177799-16-5 194296-06-5 227009-37-2 247575-24-2 249288-60-6 **364765-18-4** 402824-81-1 402824-82-2 402824-83-3 402824-84-4 402824-85-5 402824-86-6  
 RL: DEV (Device component use); USES (Uses)  
 (org. **electroluminescent** element)

IT **364765-18-4**  
 RL: DEV (Device component use); USES (Uses)  
 (org. **electroluminescent** element)

RN 364765-18-4 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



L8 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
2001:748181 Document No. 135:296018 Organic **electroluminescence**  
device and organic luminescent medium. Fukuoka, Kenichi; Hosokawa,  
Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001076323  
A1 20011011, 60 pp. DESIGNATED STATES: W: CN, IN, KR; RW: AT, BE, CH,  
CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR.  
(Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP2587 20010328.  
PRIORITY: JP 2000-93976 20000330.

AB The invention relates to an org. **electroluminescence** device  
having a pair of electrodes and an org. luminescent medium layer held  
between them, wherein the org. luminescent medium layer at least contains  
an electron-transporting compd. and an anthracene deriv. of a specific  
structure, and has excellent heat resistance, long life, and the  
efficiency of luminescence is high. An org. luminescent medium preferably  
used for such an **electroluminescence** device is also disclosed.

IC ICM H05B033-14  
ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

ST Org **electroluminescence** device anthracene deriv

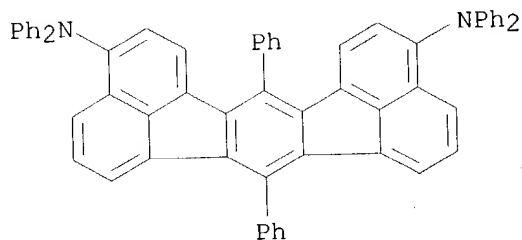
IT **Electroluminescent** devices  
(org.; luminescent medium layer of)

IT 2085-33-8, Alq3 14642-34-3 23102-67-2 122648-99-1 172285-72-2  
172285-82-4 186412-15-7 249512-71-8 331856-47-4 364765-14-0  
364765-16-2 **364765-18-4**  
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescence** device having org. luminescent  
medium layer of)

IT **364765-18-4**  
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescence** device having org. luminescent  
medium layer of)

RN 364765-18-4 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N',7,14-hexaphenyl-  
(9CI) (CA INDEX NAME)

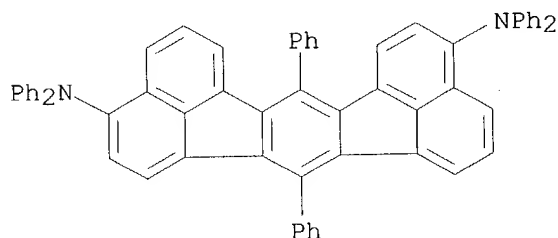


L8 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
2001:489561 Document No. 135:84101 White organic **electroluminescence**  
element. Fukuoka, Kenichi; Tagami, Sanae; Hosokawa, Chishio (Idemitsu  
Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001048116 A1 20010705, 39 pp.  
DESIGNATED STATES: W: CN, IN, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 2000-JP9227 20001226. PRIORITY: JP 1999-372514 19991228;  
JP 2000-328726 20001027.

AB The invention refers to a white org. **electroluminescence** element  
comprising a pair of electrodes, and a luminescent layer, wherein the  
luminescent layer contains a blue luminescent material and a fluorescent  
compd. within at least one fluoranthene skeleton, pentacene skeleton or

perylene skeleton. The **electroluminescence** element emits a white light, exhibits high luminescence efficiency and has a long life, and thus has satisfactory performance capabilities for practical use.

IC ICM C09K011-06  
ICS H05B033-14  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST **electroluminescence** device  
IT **Electroluminescent** devices  
(white org. **electroluminescence** element)  
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 50926-11-9, ITO 55035-42-2 65181-78-4, TPD 123847-85-8, .alpha.-NPD 142289-08-5 331856-47-4 **331965-27-6**  
RL: DEV (Device component use); USES (Uses)  
(white org. **electroluminescence** element)  
IT **331965-27-6**  
RL: DEV (Device component use); USES (Uses)  
(white org. **electroluminescence** element)  
RN **331965-27-6** HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)

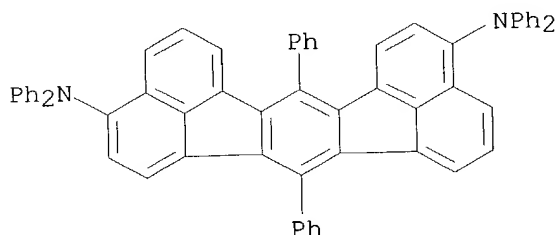


L8 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
2001:247437 Document No. 134:273348 Organic **electroluminescent** device. Tagami, Sanae; Ikeda, Hidetsugu; Hosokawa, Chishio; Arakane, Takashi (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001023497 A1 20010405, 77 pp. DESIGNATED STATES: W: CN, IN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP6658 20000927. PRIORITY: JP 1999-279462 19990930.  
AB The invention refers to an org. **electroluminescent** device contg. a compd. with a fluoranthan skeleton and at least one substituted amine or alkenyl.  
IC ICM C09K011-06  
ICS C07C013-62; C07C211-61; C07C217-92; C07C217-94; C07C229-74; C07C255-58; C07D295-12; C07D219-14; C07D223-26; C07D223-14; C07D221-18; C07D279-24; H05B033-14; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST **electroluminescent** device fluoranthan  
IT **Electroluminescent** devices  
(org. **electroluminescent** device)  
IT 199121-98-7 208598-26-9 **331965-27-6** **331965-28-7**  
**331965-29-8** **331965-30-1** **331965-31-2**  
**331965-32-3** **331965-33-4** **331965-34-5**  
**331965-35-6** **331965-36-7**  
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescent** device)

IT 331965-27-6

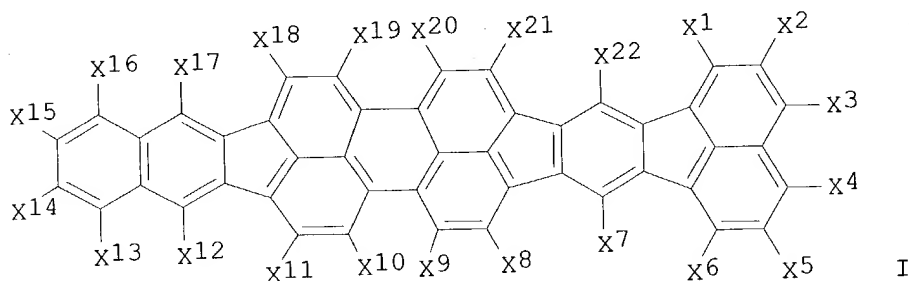
RL: DEV (Device component use); USES (Uses)  
(org. **electroluminescent** device)

RN 331965-27-6 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-hexaphenyl-  
(9CI) (CA INDEX NAME)

L8 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
 2000:77101 Document No. 132:144218 Perylene derivatives and high-luminance  
 organic **electroluminescent** devices using them. Nakatsuka,  
 Masakatsu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP  
 2000034234 A2 20000202, 113 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
 JP 1998-200859 19980715.

GI



AB The devices have .gtoreq.1 layer(s) contg. acenaphtho[1',2':5,6]indeno[1,2  
 ,3-cd]benzo[5,6]indeno[1',2',3'-lm]perylene derivs. between a pair of  
 electrodes. The derivs. comprise I [X1-X22 = H, halo, (un)substituted  
 alkyl, alkoxy, alkylthio, alkenyl, alkenyloxy, alkenylthio, aralkyl,  
 aralkyloxy, aralkylthio, aryl, aryloxy, arylthio, or amino, cyano, OH,  
 NO2, CO2R1, COR2, OCOR3; R1 = H, (un)substituted alkyl, alkenyl, aralkyl,  
 aryl; R2 = H, (un)substituted alkyl, alkenyl, aralkyl, or aryl, amino; R3  
 = (un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X22 may form  
 (un)substituted alicyclic group].

IC ICM C07C013-62

ICS C07C022-08; C07C025-22; C07C039-12; C07C043-21; C09K011-06;  
H05B033-14CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 25

ST acenaphtho, indeno benzo perylene **electroluminescent** device;  
luminance improvement org **electroluminescent** device

## acenaphthoindenobenzoindenoperylene

IT **Electroluminescent** devices

(acenaphthoindenobenzoindenoperylene derivs. for high-luminance org.

**electroluminescent** devices)

IT	256514-88-2P	256514-90-6P	256514-91-7P	256514-92-8P	256514-93-9P
	256514-94-0P	256514-95-1P	256514-96-2P	256514-97-3P	256514-98-4P
	256515-00-1P	256515-01-2P	256515-02-3P	256515-03-4P	256515-04-5P
	256515-05-6P	256515-06-7P	256515-07-8P	256515-08-9P	256515-09-0P
	256515-10-3P	256515-12-5P	256515-13-6P	256515-14-7P	256515-15-8P
	256515-16-9P	256515-17-0P	256515-18-1P	256515-19-2P	256515-20-5P
	256515-21-6P	256515-22-7P	256515-23-8P	256515-24-9P	256515-25-0P
	256515-26-1P	256515-27-2P	256515-28-3P	256515-29-4P	256515-30-7P
	256515-31-8P	256515-32-9P	256515-33-0P	256515-34-1P	256515-35-2P
	256515-36-3P	256515-37-4P	256515-38-5P	256515-41-0P	256515-43-2P
	256515-44-3P	256515-45-4P	256515-46-5P	256515-49-8P	256515-50-1P
	256515-51-2P	256515-52-3P	256515-53-4P	256515-55-6P	256515-56-7P

RL: DEV (Device component use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acenaphthoindenobenzoindenoperylene derivs. for high-luminance org.

**electroluminescent** devices)

IT	591-50-4, Iodobenzene	153390-84-2	256515-57-8	256515-60-3
	256515-61-4	256515-62-5	256515-63-6	256515-64-7
	256515-66-9	256515-67-0	256515-68-1	256515-69-2
	256515-71-6	256515-72-7	256515-73-8	256515-74-9
	256515-76-1	256515-77-2	256515-78-3	256515-79-4
	256515-81-8	<b>256515-82-9</b>	256515-83-0	256515-84-1
	256515-85-2	256515-86-3	256515-87-4	256515-88-5
	256515-90-9	256515-91-0	256515-92-1	256515-93-2
	256515-95-4	256515-96-5	256515-97-6	256515-98-7
	256516-00-4	256516-01-5	256516-02-6	256516-03-7
	256516-05-9	256516-06-0	256516-07-1	256516-08-2
	256516-10-6	<b>256516-11-7</b>	256516-12-8	256516-13-9
	256516-14-0	256516-15-1	256516-16-2	256516-17-3
				256516-18-4

RL: RCT (Reactant); RACT (Reactant or reagent) (acenaphthoindenobenzoindenoperylene derivs. for high-luminance org.

**electroluminescent** devices)

IT 256515-54-5P

RL: DEV (Device component use); PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (prepn. and N-phenylation of; acenaphthoindenobenzoindenoperylene derivs. for high-luminance org. **electroluminescent** devices)

IT 256515-47-6P 256515-48-7P

RL: DEV (Device component use); PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (prepn. and decarboxylation of; acenaphthoindenobenzoindenoperylene derivs. for high-luminance org. **electroluminescent** devices)

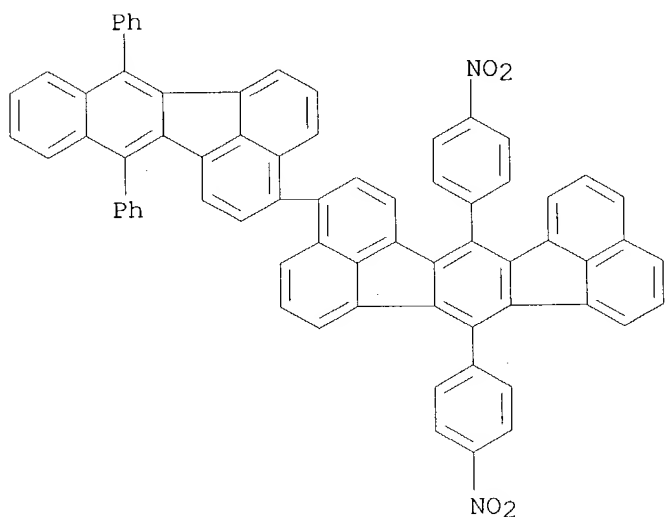
IT 256514-99-5P 256515-40-9P 256515-42-1P

RL: DEV (Device component use); PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (prepn. and hydrolysis of; acenaphthoindenobenzoindenoperylene derivs. for high-luminance org. **electroluminescent** devices)

IT 256515-11-4P 256515-39-6P

RL: DEV (Device component use); PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (prepn. and redn. of; acenaphthoindenobenzoindenoperylene derivs. for high-luminance org. **electroluminescent** devices)

- IT 256515-59-0P  
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
RACT (Reactant or reagent)  
(prepn. and ring closure reaction of; acenaphthoindenobenzoidenoperylene  
derivs. for high-luminance org. **electroluminescent**  
devices)
- IT 256514-89-3P  
RL: DEV (Device component use); PNU (Preparation, unclassified); RCT  
(Reactant); TEM (Technical or engineered material use); PREP  
(Preparation); RACT (Reactant or reagent); USES (Uses)  
(prepn. and thioarylation of; acenaphthoindenobenzoidenoperylene  
derivs. for high-luminance org. **electroluminescent** devices)
- IT 75-33-2, Isopropyl mercaptan 108-98-5, Phenyl mercaptan, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with perylene derivs.; acenaphthoindenobenzoidenoperylene  
derivs. for high-luminance org. **electroluminescent** devices)
- IT 256515-82-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acenaphthoindenobenzoidenoperylene derivs. for high-luminance org.  
**electroluminescent** devices)
- RN 256515-82-9 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 3-(7,12-diphenylbenzo[k]fluoranthene-3-yl)-  
7,14-bis(4-nitrophenyl)- (9CI) (CA INDEX NAME)



- L8 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
2000:62604 Document No. 132:130074 Organic **electroluminescence**  
device having 3,3'-biacenaphtho[1,2-.kappa.]fluoranthene derivative.  
Nakatsuka, Masakatsu; Kitamoto, Noriko (Mitsui Chemicals Inc., Japan).  
Jpn. Kokai Tokkyo Koho JP 2000026325 A2 20000125, 100 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1998-194430 19980709.
- AB The org. **electroluminescence** device has a layer contg.  
3,3'-biacenaphtho[1,2-.kappa.]fluoranthene deriv. between a pair of  
electrodes. The org. **electroluminescence** device provides the  
bright luminescence.
- IC ICM C07C013-62  
ICS C07C022-04; C07C025-22; C07C025-24; C07C033-36; C07C039-12;  
C07C043-168; C07C043-20; C07C047-546; C07C049-792; C07C063-46;

C07C069-33; C07C069-76; C07C205-11; C07C211-50; C07C233-65;  
C07C255-52; C07C321-28; C09K011-06; H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 24, 73

ST org **electroluminescence** device fluoranthene

IT **Electroluminescent** devices  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluoranthene deriv.)

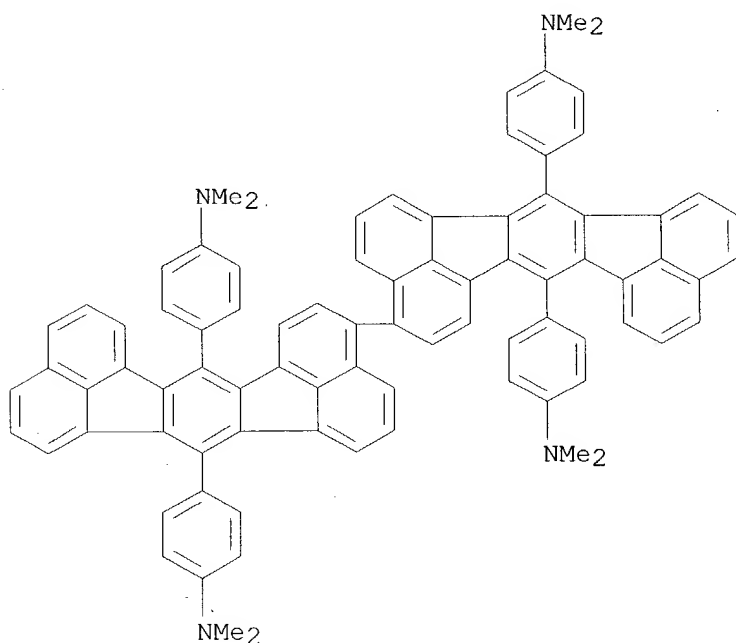
IT 256327-97-6P 256328-06-0P, 3,3'-Biacenaphtho[1,2-k]fluoranthene  
256328-07-1P 256328-08-2P 256328-09-3P 256328-10-6P 256328-11-7P  
256328-12-8P 256328-13-9P 256328-14-0P 256328-15-1P 256328-16-2P  
256328-17-3P 256328-18-4P 256328-19-5P 256328-20-8P 256328-21-9P  
256328-22-0P 256328-23-1P 256328-24-2P 256328-25-3P 256328-26-4P  
256328-27-5P 256328-28-6P 256328-29-7P 256328-30-0P 256328-31-1P  
256328-32-2P 256328-33-3P 256328-34-4P 256328-35-5P 256328-36-6P  
**256328-37-7P 256328-38-8P** 256328-39-9P 256328-40-2P  
256328-41-3P 256328-42-4P 256328-43-5P 256328-44-6P 256328-45-7P  
256328-46-8P 256328-47-9P 256328-48-0P 256328-49-1P  
**256328-50-4P** 256328-51-5P 256328-52-6P **256328-53-7P**  
**256328-54-8P 256328-55-9P 256328-56-0P**  
256328-57-1P 256328-58-2P 256328-59-3P 256328-60-6P 256328-61-7P  
256328-62-8P **256328-63-9P** 256328-64-0P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluoranthene deriv.)

IT 624-31-7, 4-Iodotoluene 1310-58-3, Potassium hydroxide, reactions  
10486-08-5, Sodium 4-Methylphenylthiolate 20607-43-6, Isopropylmercaptan  
sodium salt 153390-84-2 256327-96-5 256327-98-7 256327-99-8  
256328-00-4 256328-01-5 256328-02-6 256328-03-7 256328-04-8  
256328-05-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluoranthene deriv.)

IT **256328-37-7P**  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(org. **electroluminescence** device having 3,3'-biacenaphtho[1,2-  
k]fluoranthene deriv.)

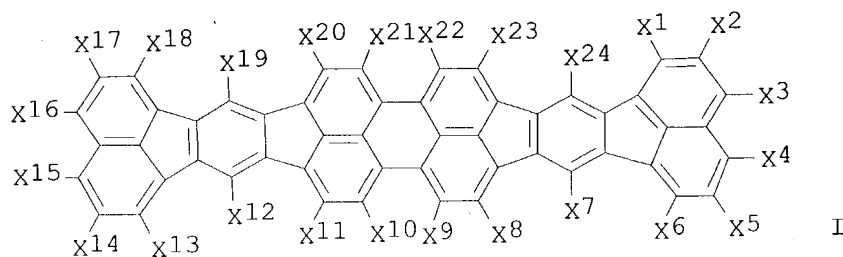
RN 256328-37-7 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-k]fluoranthene]-  
7,7',14,14'-tetrayltetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)



L8 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2002 ACS  
 2000:59110 Document No. 132:129799 Perylene derivatives and high-luminance organic **electroluminescent** devices using them. Nakatsuka, Masakatsu; Kitamoto, Noriko (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000026324 A2 20000125, 101 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-187708 19980702.

GI



AB The devices have .gtoreq.1 layer(s) contg. bisacenaphto[1',2':5,6]indeno[1,2,3-cd:1',2',3'-lm]perylene derivs. between a pair of electrodes. The derivs. comprise I [X1-X24 = H, halo, (un)substituted alkyl, alkoxy, alkylthio, alkenyl, alkenyloxy, alkenylthio, aralkyl, aralkyloxy, aralkylthio, aryl, aryloxy, arylthio, or amino, cyano, OH, NO<sub>2</sub>, CO<sub>2</sub>R<sub>1</sub>, COR<sub>2</sub>, OCOR<sub>3</sub>; R<sub>1</sub> = H, (un)substituted alkyl, alkenyl, aralkyl, aryl; R<sub>2</sub> = H, (un)substituted alkyl, alkenyl, aralkyl, or aryl, amino; R<sub>3</sub> = (un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X24 may form (un)substituted alicyclic group].

IC ICM C07C013-62

ICS C07C022-04; C07C025-22; C07C043-174; C07C043-21; C07C043-215; C07C043-225; C07C043-275; C07C047-546; C07C063-49; C07C069-78;



C07C205-06; C07C211-50; C07C211-54; C07C255-52; C07C321-28;  
C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 25

ST acenaphtho indeno perylene **electroluminescent** device; luminance improvement org **electroluminescent** device  
acenaphthoindenoperylene

IT **Electroluminescent** devices  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 2085-33-8 24601-13-6 123847-85-8 146162-48-3 146162-52-9  
169224-62-8  
RL: DEV (Device component use); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 256329-34-7P 256329-36-9P 256330-85-5P 256333-36-5P 256333-46-7P  
256333-48-9P 256333-50-3P 256333-51-4P 256333-52-5P 256333-53-6P  
256333-56-9P 256333-58-1P 256333-59-2P  
RL: DEV (Device component use); IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 231632-01-2P 256329-38-1P 256329-40-5P 256329-42-7P 256329-43-8P  
256329-44-9P 256329-48-3P 256329-49-4P 256329-51-8P 256329-52-9P  
256329-54-1P 256329-60-9P 256330-81-1P 256330-83-3P 256330-84-4P  
256330-86-6P 256330-87-7P 256330-89-9P 256330-90-2P 256330-91-3P  
256330-92-4P 256330-93-5P 256330-94-6P 256330-95-7P 256330-96-8P  
256330-97-9P 256330-98-0P 256330-99-1P 256331-00-7P 256331-01-8P  
256331-02-9P 256331-03-0P 256331-04-1P 256331-05-2P 256331-07-4P  
256331-12-1P 256331-15-4P 256331-16-5P 256332-24-8P 256332-27-1P  
256332-28-2P 256332-29-3P 256332-31-7P 256332-77-1P 256332-78-2P  
256333-22-9P 256333-24-1P 256333-25-2P 256333-26-3P 256333-27-4P  
256333-28-5P 256333-33-2P 256333-34-3P 256333-38-7P 256333-40-1P  
256333-45-6P 256333-47-8P 256333-49-0P 256333-54-7P 256333-55-8P  
256333-57-0P 256334-57-3P 256334-58-4P 256334-59-5P 256334-60-8P  
256334-61-9P 256334-62-0P 256334-65-3P 256343-53-0P 256343-54-1P  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 230636-45-0 256330-88-8  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 256327-97-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. **electroluminescent** devices)

IT 591-50-4, Iodobenzene 624-31-7, 4-Iodotoluene 10486-08-5 20607-43-6, Isopropylmercaptan sodium salt 256327-96-5 256328-08-2 256328-09-3  
256328-10-6 256328-11-7 256328-12-8 256328-13-9 256328-14-0  
256328-15-1 256328-16-2 256328-17-3 256328-18-4 256328-19-5  
256328-26-4 256328-27-5 256328-30-0 256328-31-1 256328-32-2  
256328-33-3 256328-34-4 256328-35-5 256328-36-6 **256328-37-7**  
256328-39-9 256328-40-2 256328-41-3 256328-42-4 256328-43-5  
256328-44-6 256328-45-7 256328-46-8 256328-47-9 256328-48-0

256328-51-5 256328-52-6 256328-58-2 256328-60-6 256328-61-7  
256328-62-8 256328-64-0 256335-10-1 256335-11-2 256335-12-3  
256335-13-4 256335-32-7 256337-55-0 256337-68-5 256337-69-6  
256337-70-9 256337-73-2 256337-74-3 256337-75-4 256337-77-6  
256337-78-7 256337-83-4 256342-76-4 256342-77-5 256342-78-6

256342-79-7 256343-03-0 256343-07-4

256343-08-5 256343-09-6 256343-10-9 256343-14-3

256343-15-4 256343-55-2

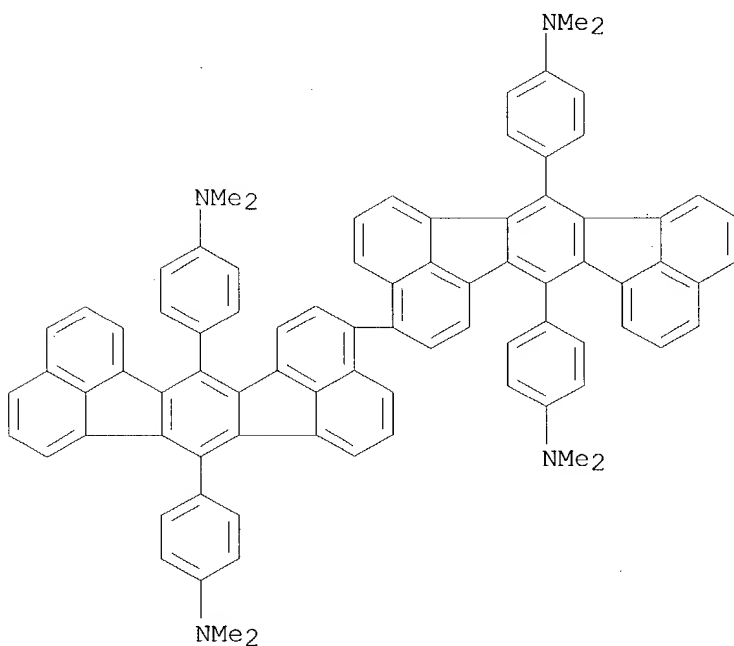
RL: RCT (Reactant); RACT (Reactant or reagent)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org.  
**electroluminescent** devices)

IT 256328-37-7

RL: RCT (Reactant); RACT (Reactant or reagent)  
(bis(acenaphthoindeno)perylene derivs. for high-luminance org.  
**electroluminescent** devices)

RN 256328-37-7 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[3,3'-biacenaphtho[1,2-k]fluoranthene]-  
7,7',14,14'-tetrayltetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)

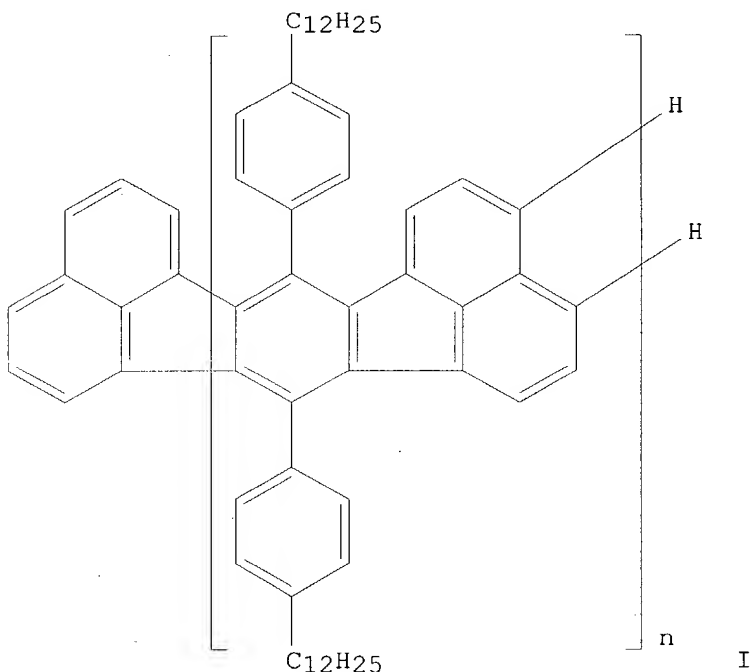


=> d L9 1-2, 6-7,9,11-12,15-42 cbib abs hitind fhitstr

L9 ANSWER 1 OF 42 HCAPLUS COPYRIGHT 2002 ACS

2002:501346 Document No. 137:238983 Structural dependence of redox-induced dimerization as studied by in situ ESR/UV/Vis-NIR spectroelectrochemistry: the fluoranthenopyracylene oligomers. Dunsch, Lothar; Rapta, Peter; Schulte, Niels; Schluter, A. Dieter (IFW Dresden Abteilung Elektrochemie und leitfähige Polymere, Dresden, 01069, Germany). Angewandte Chemie, International Edition, 41(12), 2082-2086 (English) 2002. CODEN: ACIEF5. ISSN: 1433-7851. Publisher: Wiley-VCH Verlag GmbH.

GI



AB The effect of oligomer length on the dimerization of I ( $n = 1, 2, 4, 6$ ) was studied by cyclic voltammetry and in situ ESR/UV/visible-near-IR spectroelectrochem. and radical anions were found for the first redn. steps for I ( $n = 1$  and 2) and to a very small extent for I ( $n = 4$ ). While the radical anion of I ( $n = 1$ ) is in equil. with its  $\sigma$ -dimer in soln., I ( $n = 2$ ) is already strongly stabilized and its dimerization is negligible in the studied temp. range 260-290 K. The extended  $\pi$ -conjugation in I ( $n = 4$  and 6) is sufficient for stabilization of charges in the mol. without dimerization. Thus, the extension of the  $\pi$  systems in the homologous series described here disfavors chem. dimerization. This is an indication that dimerization in org. conducting polymers may not necessarily be a general mechanism for the stabilization of radical ions.

CC 72-2 (Electrochemistry)

Section cross-reference(s): 22, 25, 35

IT 352532-72-0

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(electrochem. redn. and structural dependence of redox-induced dimerization as studied by in situ ESR/UV/visible-near-IR spectroelectrochem.)

IT 457949-69-8 457949-70-1

RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)

(structural dependence of redox-induced dimerization as studied by in situ ESR/UV/Vis-NIR spectroelectrochem.: visible-near IR spectra and ESR of electrogenerated)

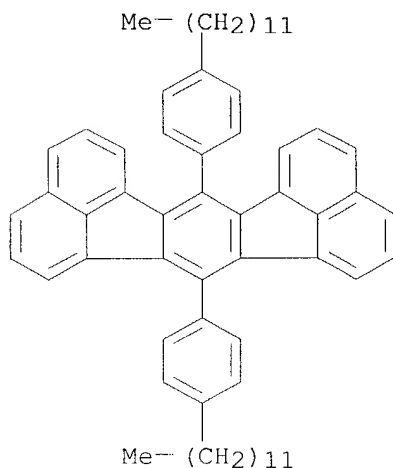
IT 352532-72-0

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(electrochem. redn. and structural dependence of redox-induced dimerization as studied by in situ ESR/UV/visible-near-IR spectroelectrochem.)

RN 352532-72-0 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-bis(4-dodecylphenyl)- (9CI) (CA INDEX NAME)



L9 ANSWER 2 OF 42 HCAPLUS COPYRIGHT 2002 ACS

2001:402019 Document No. 135:152613 Novel perylene chromophores obtained by a facile oxidative cyclodehydrogenation route. Wehmeier, Mike; Wagner, Manfred; Mullen, Klaus (Max-Planck-Institut fur Polymerforschung, Mainz, 55128, Germany). Chemistry--A European Journal, 7(10), 2197-2205 (English) 2001. CODEN: CEUJED. ISSN: 0947-6539. OTHER SOURCES: CASREACT 135:152613. Publisher: Wiley-VCH Verlag GmbH.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Perylene chromophores, phenyl-substituted diindeno[1,2,3-cd:1',2',3'-lm]perylene, e.g. I [R = Me(CH<sub>2</sub>)<sub>11</sub>], and 4,4',7,7'-tetraphenyldiacenaphtho[1,2-k:1',2',k']diindeno[1,2,3-cd:1',2',3'-me]perylene II [R = H, Me(CH<sub>2</sub>)<sub>11</sub>], were synthesized from substituted fluoranthenes III and IV by means of a surprisingly simple oxidative cyclodehydrogenation reaction. The resulting chromophores, when substituted with peripheral alkyl chains, showed good solubility in organic solvents. Full characterization of the novel red, green, and blue dyes by field-desorption mass spectrometry, UV/Vis and <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy was performed.

CC 25-28 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 41, 74

IT 352532-72-0P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of perylene chromophores via facile oxidative cyclodehydrogenation of fluoranthenes)

IT 641-57-6P **7229-88-1P** 13238-75-0P 92186-08-8P 126930-72-1P  
156733-60-7P 189139-40-0P 189139-45-5P 217489-65-1P 231606-35-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

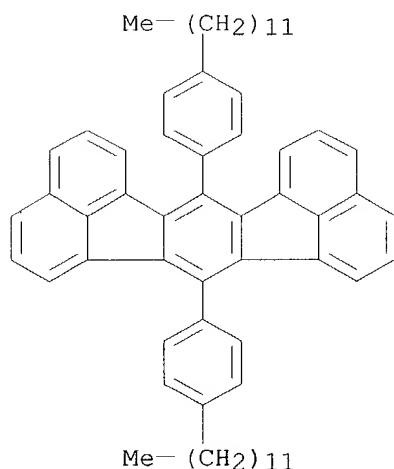
(prepn. of perylene chromophores via facile oxidative cyclodehydrogenation of fluoranthenes)

IT **352532-72-0P**  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of perylene chromophores via facile oxidative cyclodehydrogenation of fluoranthenes)

RN 352532-72-0 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-bis(4-dodecylphenyl)- (9CI) (CA INDEX NAME)



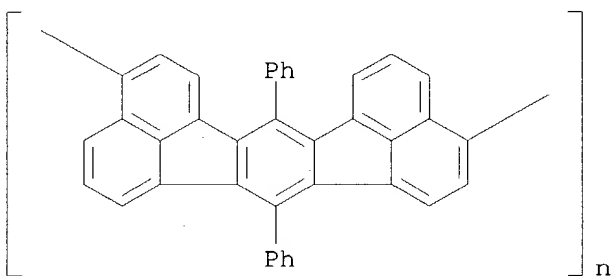
L9 ANSWER 6 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1999:464051 Document No. 131:109230 Electroactive and electrochromic hydrocarbon polymers. Bard, Allen J.; Debad, Jeff D. (Board of Regents, the University of Texas System, USA). PCT Int. Appl. WO 9933935 A1 19990708, 24 pp. DESIGNATED STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 1998-US27844 19981230. PRIORITY: US 1997-70007 19971230.

AB The oxidn. of 7,14-diphenylacenaphtho[1,2-.kappa.]fluoranthene (1) at platinum or indium tin-oxide electrodes leads to deposition of a polymer film on the electrode surface that displays many interesting properties including electroactivity, fluorescence, and electrochromism. Thin films of this polymer appear deep blue in the neutral state, but become pale gray upon oxidn. and light green or orange upon redn., depending upon the voltage applied. Sol. oligomers of poly(3,10-(7,14-diphenylacenaphtho[1,2-.kappa.]fluoranthene)) are formed during oxidn. of the monomer (1) via radical cation-radical cation coupling reactions and are identical to

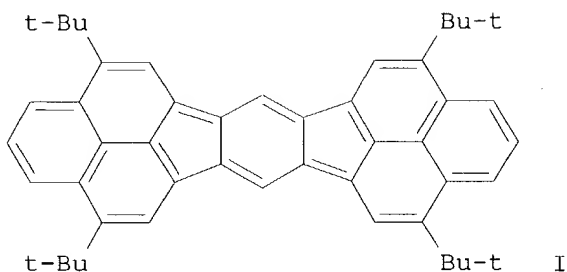
those chem. synthesized by the Ni(0)-catalyzed coupling of the 3,10-dibromo deriv. of 1. Further oxidn. of these oligomers leads to intramol. coupling reactions to form ladder structures within the chains and the eventual pptn. of insol. polymer onto the electrode. Spectroscopic and electrochem. data for the polymer film and the isolated oligomers is presented.

- IC ICM C09K019-06  
ICS C09K019-52; C08F130-02; C08F130-04  
CC 75-9 (Crystallography and Liquid Crystals)  
Section cross-reference(s): 25, 36, 73  
IT **230636-44-9P 230636-47-2P**  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(electrodeposition of electroactive and electrochromic thin films of)  
IT **7229-88-1, 7,14-Diphenylacenaphtho[1,2-k]fluoranthene**  
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
(electrooxidn. of)  
IT **230636-46-1, 3,10-Dibromo-7,14-diphenylacenaphtho[1,2-k]fluoranthene**  
RL: FMU (Formation, unclassified); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
(formation by bromination of 7,14-Diphenylacenaphtho[1,2-kappa.]fluoranthene)  
IT **230636-44-9P**  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
(electrodeposition of electroactive and electrochromic thin films of)  
RN 230636-44-9 HCAPLUS  
CN Poly(7,14-diphenylacenaphtho[1,2-k]fluoranthene-3,10-diyl) (9CI) (CA INDEX NAME)



- L9 ANSWER 7 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1998:150208 Document No. 128:204534 4,8,12,16-Tetra-tert-butyl-s-indaceno[1,2,3-cd:5,6,7-c'd']diphenalene: a four-stage amphoteric redox system. Ohashi, Kenji; Kubo, Takashi; Masui, Takashi; Yamamoto, Kagetoshi; Nakasuji, Kazuhiro; Takui, Takeji; Kai, Yasushi; Murata, Ichiro (Department of Chemistry Graduate School of Science, Osaka University, Toyonaka, 560, Japan). Journal of the American Chemical Society, 120(9), 2018-2027 (English) 1998. CODEN: JACSAT. ISSN: 0002-7863. OTHER SOURCES: CASREACT 128:204534. Publisher: American Chemical Society.

GI



AB A 4-stage amphoteric redox hydrocarbon (I) contg. 2 phenalenyl units was prepd. X-ray crystallog. of I reveals a delocalized D<sub>2h</sub> structure, which is consistent with the presence of only 5 signals in the <sup>1</sup>H NMR spectrum of I at -60.degree.. The cyclic voltammogram of I exhibits 4 reversible redox waves with a small numerical sum (E<sub>lsum</sub>) of 1st oxidn. (E<sub>lox</sub>) and redn. (E<sub>red</sub>) potentials. Four redox states of I were successfully generated from the neutral I, and were characterized by NMR, ESR and UV-visible-near-IR spectroscopies and theor. calcns. These spectral data reveal that phenalenyl units play an important role in the high amphotericity of I and the stability of the redox states generated.

CC 22-7 (Physical Organic Chemistry)

IT 203726-94-7P 203727-00-8P **203727-07-5P** 203727-10-0P

**203727-13-3P** **203727-16-6P** 203727-19-9P 203727-22-4P

203727-25-7P 203727-30-4P 203809-01-2P 203812-31-1P 203812-32-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(tetra-tert-butylindacenodiphenalene synthesis as four-stage amphoteric redox system)

IT 105-50-0, Diethyl 1,3-acetonedicarboxylate 105-53-3, Diethyl malonate  
203726-88-9 203726-91-4 **203727-03-1**

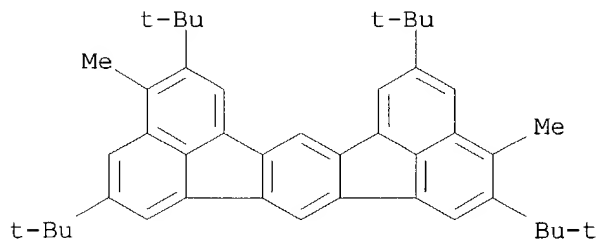
RL: RCT (Reactant); RACT (Reactant or reagent)  
(tetra-tert-butylindacenodiphenalene synthesis as four-stage amphoteric redox system)

IT **203727-07-5P**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(tetra-tert-butylindacenodiphenalene synthesis as four-stage amphoteric redox system)

RN 203727-07-5 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 2,5,9,12-tetrakis(1,1-dimethylethyl)-3,10-dimethyl- (9CI) (CA INDEX NAME)

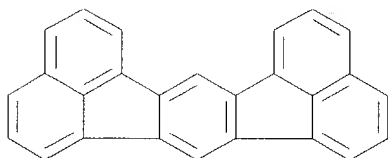


L9 ANSWER 9 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1998:69604 Document No. 128:180005 An AM1 semiempirical study of longitudinal twisting in PAH and CPAH. Steffen, L. Kraig; Kong, Ching;

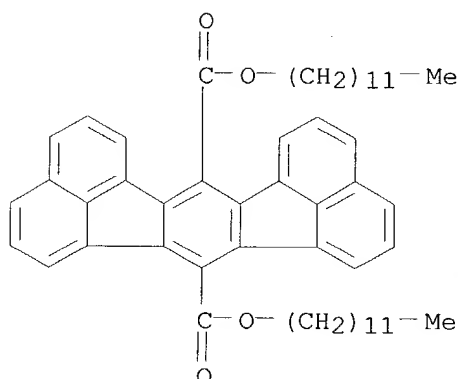
Papagikos, Mike (Dep. Chem., Fairfield Univ., Fairfield, CT, 06430, USA).  
THEOCHEM, 419, 205-211 (English) 1997. CODEN: THEODJ. ISSN: 0166-1280.  
Publisher: Elsevier Science B.V..

- AB The twisting along the major axis of a series of linear polycyclic arom. hydrocarbons has been studied by using AM1 semiempirical calcns. Polycyclic arom. hydrocarbons (PAH) contg. only six-membered rings are shown to be easier to twist along their long axis compared with similar PAH contg. embedded cyclopentene rings (CPAH). The difference in the energies is evident even at very low twist angles and becomes more pronounced as the twist angle approaches 90.degree.. The calcns. were done by defining sets of parallel dihedrals along the long axis of the PAH and CPAH and driving the dihedrals sym. while allowing for a full geometry optimization of the rest of the mol.
- CC 22-2 (Physical Organic Chemistry)
- IT 129-00-0, Pyrene, properties 187-78-0, Pyracyclene 188-72-7, Tribenzo[de,kl,rst]pentaphene 188-73-8, Quaterrylene 198-55-0, Perylene 207-02-3, Acenaphth[1,2-k]fluoranthene 56181-09-0 98570-53-7, Bis(coronene) 180285-68-1 203188-00-5  
RL: PRP (Properties)  
(AM1 study of twisted conformer energies of linear polycyclic arom. hydrocarbons)
- IT 207-02-3, Acenaphth[1,2-k]fluoranthene  
RL: PRP (Properties)  
(AM1 study of twisted conformer energies of linear polycyclic arom. hydrocarbons)
- RN 207-02-3 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- L9 ANSWER 11 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1996:339091 Document No. 125:114270 Repetitive synthesis of soluble oligofluoranthene derivatives and their electrochemical analysis. Schlicke, Benedikt; Schlueter, A.-Dieter; Hauser, Petra; Heinze, Juergen (Institut fuer Organische Chemie, Freie Universitaet Berlin, Berlin, D-14195, Germany). Synlett (5), 425-426 (English) 1996. CODEN: SYNLES. ISSN: 0936-5214. Publisher: Thieme.
- AB The synthesis of three new oligofluoranthenes is described, the longest of which has three repeat units and is a 17 ring polyarom. hydrocarbon. They are decorated with flexible side chains for soly. reasons. Their redox potentials have been measured using cyclic voltammetry.
- CC 25-28 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 22, 35
- IT 178972-04-8P 178972-05-9P 178972-06-0P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclic voltammetry of oligofluoranthenes)
- IT 178972-04-8P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclic voltammetry of oligofluoranthenes)
- RN 178972-04-8 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene-7,14-dicarboxylic acid, didodecyl ester (9CI) (CA INDEX NAME)

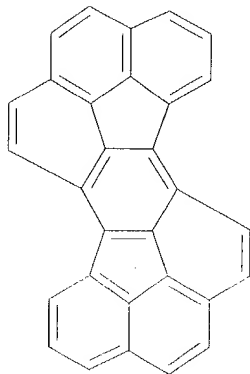




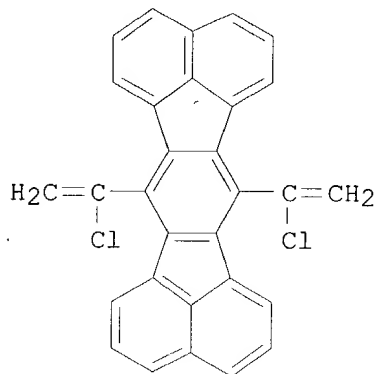
L9 ANSWER 12 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
 1996:98981 Document No. 124:260546 Synthesis and characterization of  
 hepta[5][5]circulene as a subunit of C70 fullerene. Matsuda, Masanori;  
 Matsubara, Hiroshi; Sato, Masaaki; Okamoto, Susumu; Yamamoto, Koji (Dep.  
 Chem., Univ. Osaka Prefecture, Sakai, 593, Japan). Chemistry Letters (2),  
 157-8 (English) 1996. CODEN: CMLTAG. ISSN: 0366-7022. Publisher: Nippon  
 Kagakkai.

GI

✓ordered



I



II

AB The polycyclic arom. compd. with a S-shaped circular arrangement of seven  
 benzene rings, hepta[5][5]circulene I, was prepd. by FVP of  
 bis(1-chlorovinyl)acenaphthofluoranthene II. The structure and  
 electrochem. properties were also reported.

CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 Section cross-reference(s): 22

IT 20852-10-2P **175289-24-4P** **175289-25-5P**  
**175289-26-6P** **175289-27-7P** **175289-28-8P**  
**175289-29-9P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and cyclic voltammetry of heptacirculene)

IT **175289-24-4P**

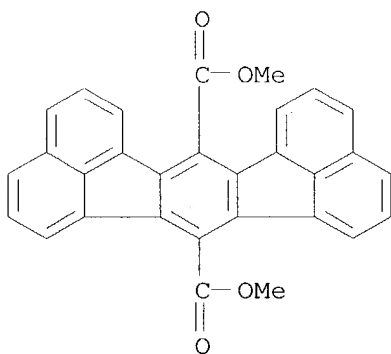
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(prepn. and cyclic voltammetry of heptacirculene)

RN 175289-24-4 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-7,14-dicarboxylic acid, dimethyl ester (9CI)  
(CA INDEX NAME)



L9 ANSWER 15 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1993:516560 Document No. 119:116560 The structure of 7,14-dicarbonylethoxyacenaphth[1,2-k]fluoranthene and its tetracyanoquinodimethane charge transfer complex. Plummer, Benjamin F.; Reese, W. Gregory; Watson, William H.; Krawiec, Mariusz (Dep. Chem., Trinity Univ., San Antonio, TX, 78212, USA). Structural Chemistry, 4(1), 53-7 (English) 1993. CODEN: STCHES. ISSN: 1040-0400. OTHER SOURCES: CASREACT 119:116560.

AB A mol. mechanics simulation of the structure of 7,14-dicarbonylethoxyacenaphth[1,2-k]fluoranthene 1, indicated a preferred geometry for the hindered substituents in which the carbonyl groups were constrained to an anti conformation because of the steric hindrance assocd. with the in-plane buttressing hydrogen atoms. X-ray crystallog. anal. of 1 verifies the correctness of the computation. Compd. 1 and tetracyanoquinodimethane, 2, form a charge transfer complex, and a crystal structure anal. shows a slightly offset, nearly parallel arrangement of the acceptor with the .pi. cloud of the donor. The interplanar distance of 3.45 .ANG. between acceptor and donor lies within the statistical limits of the interplanar distance of .pi. complexes formed between 2 and a variety of PAH donors. The steric hindrance caused by the substituents in 1 appears to offer only minimal interference to the formation of the .pi. complex.

CC 22-3 (Physical Organic Chemistry)

Section cross-reference(s): 75

IT 148902-28-7P

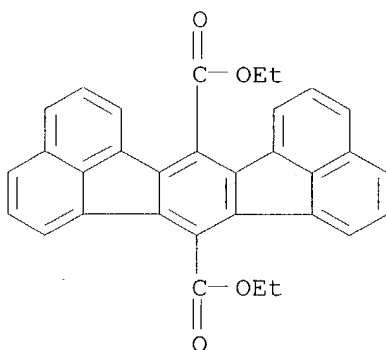
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and structure of)

IT 148902-28-7P

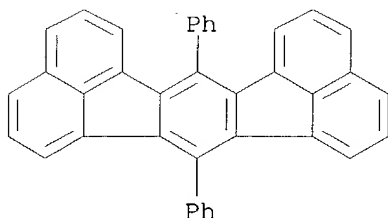
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and structure of)

RN 148902-28-7 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene-7,14-dicarboxylic acid, diethyl ester (9CI)  
(CA INDEX NAME)



- L9 ANSWER 16 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
 1991:594783 Document No. 115:194783 Structures of 7,10-diphenylfluoranthene and 7,14-diphenylacenaphtho[1,2-k]fluoranthene. Watson, William H.; Kashyap, Ram P.; Plummer, Benjamin F.; Reese, William Gregory (Dep. Chem., Texas Christian Univ., Fort Worth, TX, 76129, USA). Acta Crystallographica, Section C: Crystal Structure Communications, C47(9), 1848-51 (English) 1991. CODEN: ACSCEE. ISSN: 0108-2701.
- AB 7,10-Diphenylfluoranthene (I) is triclinic, space group P.hivin.1, with a 10.657(2), b 13.019(2), c 14.535(2) .ANG., .alpha. 101.01(1), .beta. 90.90(1), and .gamma. 108.01(1).degree.; Z = 2 (2 mols./Z), dc = 1.254; R = 0.0663 for 5106 reflections. 7,14-Diphenylacenaphtho[1,2-k]fluoranthene (II) is orthorhombic, space group Abam, with a 13.752(8), b 7.877(5), and c 22.907(16) .ANG.; Z = 4, dc = 1.281; R = 0.0552 for 1287 reflections. At. coordinates are given. The fluoranthene moieties in the 2 mols. of I are significantly nonplanar with the Ph rings contg. the di-Ph substituents slightly folded to minimize steric interactions and strain energies. Mol. mechanics reproduces the obsd. deviations from planarity. The acenaphthofluoranthene moiety in II is planar and the Ph substituents are twisted out of the plane by 77.3(4).degree.. Mol.-mechanics calcns. indicate that the mol. should distort from planarity more than I; however, the thermal parameters are consistent with a rigidly planar mol.
- CC 75-8 (Crystallography and Liquid Crystals)  
 Section cross-reference(s): 25
- IT **7229-88-1**, 7,14-Diphenyl-acenaphtho[1,2-k]fluoranthene  
 55087-78-0, 7,10-Diphenylfluoranthene  
 RL: PRP (Properties)  
 (crystal structure of)
- IT **7229-88-1**, 7,14-Diphenyl-acenaphtho[1,2-k]fluoranthene  
 RL: PRP (Properties)  
 (crystal structure of)
- RN 7229-88-1 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 17 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1991:163690 Document No. 114:163690 Synthesis of a strong amphoteric s-indaceno[1,2,3-cd:5,6,7-c'd']diphenalene: interchange between diatropic and paratropic dependence on oxidation. Murata, Ichiro; Sasaki, Shigeru; Klabunde, Kay Uwe; Toyoda, Jiro; Nakasuji, Kazuhiro; Merck, E. (Fac. Sci., Osaka Univ., Toyonaka, 560, Japan). Angewandte Chemie, 103(2), 198-9 (See also Angew. Chem., Int. Ed. Engl., 1991, 30(2), 172-3) (German) 1991. CODEN: ANCEAD. ISSN: 0044-8249. OTHER SOURCES: CASREACT 114:163690.

GI For diagram(s), see printed CA Issue.

AB Indacenodiphenalene deriv. I was prepd. by a multistep procedure starting from 5-bromoacenaphthylene and 3-bromo-7,9-diisopropylcyclopent[a]acenaphthylene-8-one. The electrochem. behavior of I was studied by cyclic voltammetry.

CC 25-28 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 22, 72

IT **131435-51-3P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and alkylation reaction of, with tert-Bu acetate)

IT **131435-50-2P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and bromodehydroxylation of)

IT **131435-53-5P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and cyclization of)

IT **131435-48-8P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and formylation of)

IT **131435-52-4P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and hydrolysis of)

IT **131435-49-9P**

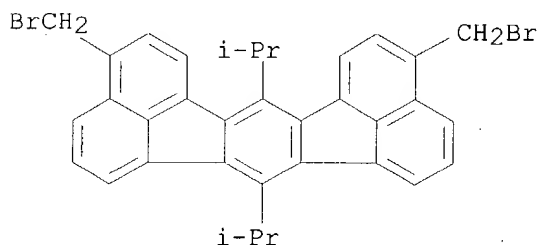
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and redn. of)

IT **131435-51-3P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and alkylation reaction of, with tert-Bu acetate)

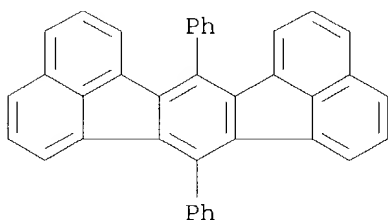
RN 131435-51-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 3,11-bis(bromomethyl)-7,14-bis(1-methylethyl)- (9CI) (CA INDEX NAME)



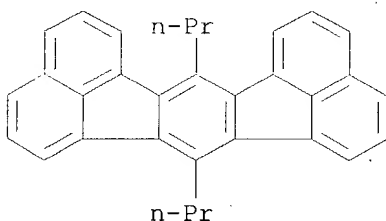
L9 ANSWER 18 OF 42 HCAPLUS COPYRIGHT 2002 ACS

- 1991:63316 Document No. 114:63316 Plasma etching of thin layers of organic polymers. Part 1. Addition of aromatic compounds. Eggert, Lutz; Jacob, Sabine; Abraham, Werner (Fachbereich Chem., Humboldt-Univ., Berlin, O-1040, Ger. Dem. Rep.). Zeitschrift fuer Chemie, 30(10), 381-2 (German) 1990. CODEN: ZECEAL. ISSN: 0044-2402.
- AB A 1-.mu.m layer of PMMA doped with 6.5 .times. 10<sup>-2</sup> M of 8 different arom. polycyclic hydrocarbons was subjected to O plasma degrdn. (39 W, 46.6 Pa). The stabilizing effects of the arom. compds. were discussed in terms of singlet and triplet energy levels and oxidn. and redn. potentials in the ground and excited states. The relative etching rates showed that stabilization was least (1.00) for phenanthrene, acenaphthene, and azulene and greatest (1.36) for 7,14-diphenylacenaphtho[1,2-k]fluoranthene.
- CC 37-4 (Plastics Manufacture and Processing)
- IT 83-32-9, Acenaphthene 85-01-8, Phenanthrene, reactions 129-00-0, Pyrene, reactions 275-51-4, Azulene 517-51-1, Rubrene 602-55-1, 9-Phenylanthracene 1499-10-1, 9,10-Diphenylanthracene **7229-88-1**  
RL: USES (Uses)  
(PMMA contg., rate of oxygen plasma etching of)
- IT **7229-88-1**  
RL: USES (Uses)  
(PMMA contg., rate of oxygen plasma etching of)
- RN 7229-88-1 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)

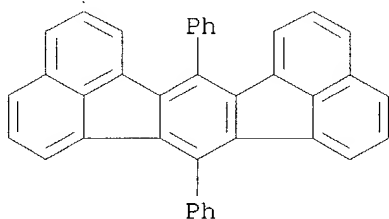


- L9 ANSWER 19 OF 42 HCAPLUS COPYRIGHT 2002 ACS
- 1988:464752 Document No. 109:64752 The structure of 7,14-di-n-propylacenaphtho[1,2-k]fluoranthene. Seth, S.; Sur, H.; Chakraborty, S. (Dep. Phys., Durgapur Gov. Coll., Durgapur, 713214, India). Acta Crystallographica, Section C: Crystal Structure Communications, C44(6), 1011-14 (English) 1988. CODEN: ACSCEE. ISSN: 0108-2701.
- AB The title compd. is monoclinic, space group C2/c, with a 18.727(3), b 5.149(2), c 24.078(4) .ANG., and .beta. 109.67(1).degree.; dm = 1.26(1) and dc = 1.247 for Z = 4. Final R = 0.048 for 1717 diffractometer data. At. coordinates are given. The mol. is nonplanar and is closely related to 7,14-dibutylacenaphthol[1,2-k]fluoranthene and 7,14-dipentylacenaphthol[1,2-k]fluoranthene. The Pr group is almost planar forming a zigzag arrangement pointing along c and perpendicular to the needle axis b. It has normal configuration and dimensions, with C-C distances of 1.505(3)-1.531(4) .ANG.. The atoms of the fluoranthene moiety are coplanar to within .+-.0.050(2) .ANG.; the plane of the Pr group is almost perpendicular to it. Mols. are held together by van der Waals interactions. Bond lengths and angles are in reasonable agreement with those obtained in other 7,14-disubstituted acenaphtho[1,2-k]fluoranthenes.
- CC 75-8 (Crystallography and Liquid Crystals)  
Section cross-reference(s): 25
- IT **36941-93-2**  
RL: PRP (Properties)

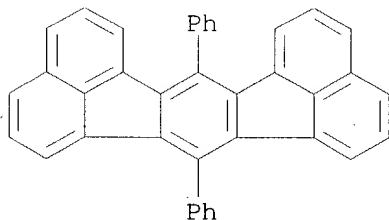
(crystal structure of)  
IT 36941-93-2  
RL: PRP (Properties)  
(crystal structure of)  
RN 36941-93-2 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 7,14-dipropyl- (9CI) (CA INDEX NAME)



L9 ANSWER 20 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1986:236607 Document No. 104:236607 Electrogenerated chemiluminescence in mechanistic investigations of electroorganic reactions. Part VI. Sensitive detection of cation radicals by bis[1,2,3-trimethyl-2,3-dihydrobenzimidazolyl-(2)]/luminophor systems. Pragst, F.; Niazymbetov, M. (Sekt. Chem., Humboldt-Univ., Berlin, DDR-1040, Ger. Dem. Rep.). Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 197(1-2), 245-64 (English) 1986. CODEN: JEIEBC. ISSN: 0022-0728.  
AB Cation radicals D.+ , formed as the primary products in an anodic process, produce a luminescence signal in the potential region of the voltammetric wave of D, if the oxidn. is carried out in the presence of bis[1,2,3-trimethyl-2,3-dihydrobenzimidazolyl-(2)], B2, and a suitable luminophor, A, such as 9,10-diphenylanthracene (DPA), 2-phenyl-4-p-biphenyl-1,3,4-oxadiazole (PBD) or other highly fluorescent arom. hydrocarbons, oxazoles or oxadiazoles. The use of this luminescence signal for a sensitive detection of D.+ was tested at a rotating disk electrode in a 1:1 MeCN + PhMe mixt. as the solvent for a series of arom. and aliph. amines, .DELTA.2-pyrazolines, carbazole, indole, 1,4-dihydropyridines, phenols, methoxybenzenes and tri-arylphosphines. For stable cation radicals the luminescence-potential curve shows a prewave at the foot of the voltammetric wave of D and a luminescence plateau in the limiting current region. In the case of a chem. reaction of D.+ the plateau is diminished or vanishes completely and the prewave changes to a prepeak between 20 and 100 mV below E1/2ox(D). The prepeak also decreases with increasing rate of the subsequent reaction, but is still seen for very short lived D.+ , e.g. for hydroquinone, carbazole or triphenylphosphine. The advantages and the restrictions of the method are discussed in the context of the luminescence mechanism.  
CC 80-6 (Organic Analytical Chemistry)  
Section cross-reference(s): 22, 72, 73  
IT 197-61-5 206-44-0 517-51-1 852-38-0 1499-10-1 1806-34-4  
2083-09-2 7229-88-1  
RL: ANST (Analytical study)  
(electrochem. and spectroscopic properties of, luminophor action in relation to)  
IT 7229-88-1  
RL: ANST (Analytical study)  
(electrochem. and spectroscopic properties of, luminophor action in relation to)  
RN 7229-88-1 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



- L9 ANSWER 21 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1985:552380 Document No. 103:152380 Use of bis(1,2,4,6-tetramethyl-1,4-dihydro-4-pyridinyl) as a reducing agent for the generation of organic anion radicals in EPR spectroscopy. Pragst, Fritz; Stoesser, Reinhard (Sekt. Chem., Humboldt-Univ., Berlin, DDR-1040, Ger. Dem. Rep.). Zeitschrift fuer Chemie, 25(6), 222 (German) 1985. CODEN: ZECEAL. ISSN: 0044-2402.
- AB ESR data are given for the radical anions of anthraquinone, rubicene, fluorenone, and 7,14-diphenylacenaphtho[1,2-k]fluoranthene, obtained by redn. of the neutral compds. with bis(1,2,4,6-tetramethyl-1,4-dihydro-4-pyridinyl).
- CC 77-6 (Magnetic Phenomena)
- IT **60466-00-4**  
RL: PRP (Properties)  
(ESR of, formed by redn. of mol. with bis(1,2,4,6-tetramethyl-1,4-dihydro-4-pyridinyl))
- IT 84-65-1 197-61-5 486-25-9 **7229-88-1**  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(redn. of, by bis(1,2,4,6-tetramethyl-1,4-dihydro-4-pyridinyl), ESR of radical anion formed by)
- IT **60466-00-4**  
RL: PRP (Properties)  
(ESR of, formed by redn. of mol. with bis(1,2,4,6-tetramethyl-1,4-dihydro-4-pyridinyl))
- RN 60466-00-4 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl-, radical ion(1-) (9CI) (CA INDEX NAME)



- L9 ANSWER 22 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1985:23790 Document No. 102:23790 Quantitative application of resonance theory to spectroscopic and polarographic behavior of the fluoranthene series. Zhai, Fudong; Dai, Qianhuan; Sun, Sengen (Dep. Environ. Chem., Beijing Polytech. Univ., Peop. Rep. China). Beijing Gongye Daxue Xuebao, 10(3), 31-41 (Chinese) 1984. CODEN: BGDXD6. ISSN: 0254-0037.
- AB Resonance theory was applied to the UV spectral and polarog. parameters in

30 fluorantheneoid compds. Based on regression anal., linear relations were established between the natural logarithms of the ratios of excited structure count and the ground-state structure count (ln ESC/SC) and .DELTA.E.thermod., UV frequency correlation coeff., and polarog. half-wave potential. The results were consistent with the phys. models of an excited state induced by UV light, polarog. redn., or oxidn.

CC 22-2 (Physical Organic Chemistry)

IT 188-94-3 190-60-3 190-86-3 191-23-1 191-55-9 191-58-2 192-35-8  
192-42-7 193-21-5 193-39-5 193-43-1 196-26-9 196-54-3 197-61-5  
203-05-4 203-11-2 203-12-3 203-23-6 203-33-8 205-82-3 205-83-4  
205-99-2 206-44-0 **207-02-3** 207-08-9 207-18-1 207-24-9  
340-19-2 387-08-6 93794-60-6

RL: PRP (Properties)

(electronic spectrum and polarog. of, resonance theory in relation to)

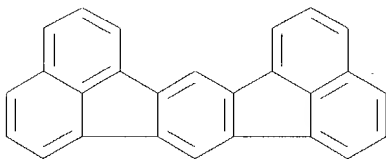
IT **207-02-3**

RL: PRP (Properties)

(electronic spectrum and polarog. of, resonance theory in relation to)

RN 207-02-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 23 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1983:521967 Document No. 99:121967 Polycyclic aromatic compounds. Part IX. A new synthesis of highly arylated fluoranthene derivatives. Mondal, S.; Bandyopadhyay, T. K.; Bhattacharya, A. J. (Dep. Chem., Univ. Burdwan, Burdwan, 713 104, India). Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry, 22B(3), 225-9 (English) 1983. CODEN: IJSBDB. ISSN: 0376-4699. OTHER SOURCES: CASREACT 99:121967.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A series of highly-substituted fluoranthene derivs. I-III (R = Ph, 4-MeC<sub>6</sub>H<sub>4</sub>, EtC<sub>6</sub>H<sub>4</sub>, 4-MeOC<sub>6</sub>H<sub>4</sub>, 3,4-Me<sub>2</sub>C<sub>6</sub>H<sub>4</sub>) was prepd. by Diels-Alder cycloaddn. of cyclopentadienones IV-VI to VII (R = H). The carbonyl-bridged adducts were cleaved by strong ethanolic KOH. Fluoranthenes were also prepd. in one step by condensation of dienones with VII (R<sub>1</sub> = Cl).

CC 25-28 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT **7229-88-1P** 13238-75-0P 13238-76-1P 86997-64-0P 86997-65-1P  
86997-66-2P 86997-67-3P 86997-68-4P 86997-69-5P 86997-70-8P  
86997-71-9P 86997-72-0P 86997-73-1P 86997-74-2P 86997-75-3P  
**86997-76-4P 86997-77-5P 86997-78-6P**

**87016-10-2P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of)

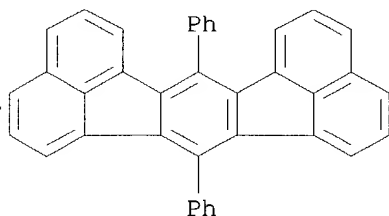
IT **7229-88-1P**



RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 7229-88-1 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 24 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1983:189478 Document No. 98:189478 The structure of 7,14-di-n-pentylacenaphtho[1,2-k]fluoranthene, C36H34. Seth, S.; Chakraborty, S. (Dep. Phys., Univ. Burdwan, Burdwan, 713 104, India). Acta Crystallogr., Sect. C: Cryst. Struct. Commun., C39(5), 625-7 (English) 1983. CODEN: ACSCEE.

AB The title compd. is monoclinic, space group P21/c, with a 5.071(3), b 17.971(4), c 14.156(4) .ANG., .beta. 90.20(4).degree.; d. (exptl.) = 1.21(1) and d. (calcd.) = 1.201 for Z = 2. Final R = 0.048 for 1842 obsd. diffractometer data. At. parameters are given. The structure is closely related to that of 7,14-dibutylacenaphthol[1,2-k]fluoranthene. The atoms of the fluoranthene ring are coplanar to within .+-.0.034(2) .ANG.. The pentyl group, forming a zigzag arrangement parallel to the needle axis, is almost planar and has normal configuration and dimensions, with C-C distances 1.505(3)-1.535(3) .ANG.. It is perpendicular to the fluoranthene moiety. The dipentylacenaphthofluoranthene mols. are held together by van der Waals forces. The mol. parameters are in reasonably good agreement with those found in similar structures.

CC 75-8 (Crystallography and Liquid Crystals)

Section cross-reference(s): 25

IT 37050-35-4

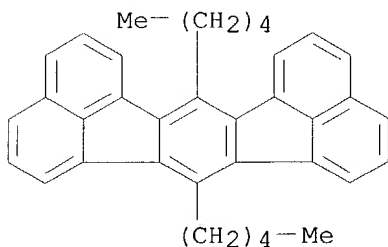
RL: PRP (Properties)  
(crystal structure of)

IT 37050-35-4

RL: PRP (Properties)  
(crystal structure of)

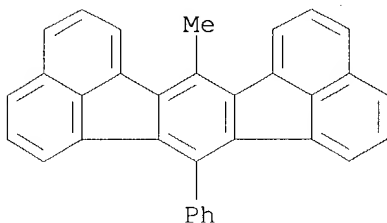
RN 37050-35-4 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-dipentyl- (9CI) (CA INDEX NAME)



L9 ANSWER 25 OF 42 HCAPLUS COPYRIGHT 2002 ACS

- 1982:172489 Document No. 96:172489 Structure of 14-methyl-7-phenylacenaphtho[1,2-k]fluoranthene. Seth, S.; Chakraborty, S. (Dep. Phys., Univ. Burdwan, Burdwan, 713104, India). Acta Crystallogr., Sect. B, B38(4), 1380-3 (English) 1982. CODEN: ACBCAR. ISSN: 0567-7408.
- AB The title compd. is triclinic, space group P.hivin.1, with a 12.184(7), b 12.507(6), c 8.542(3) .ANG., .alpha. 97.64(4), .beta. 104.45(4), and .gamma. 116.19(3).degree.; dc = 1.274 and dm = 1.26(3) for Z = 2. The structure was detd. by direct methods and refined to a final R = 0.051 for 2467 data. The fluoranthene moiety is slightly non-planar; the Ph ring is almost perpendicular to it and is essentially planar with normal dimensions. Bond lengths and angles agree with those in other nonalternant hydrocarbons. At. coordinate are given.
- CC 75-8 (Crystallography and Liquid Crystals)  
Section cross-reference(s): 25
- IT **36941-95-4**  
RL: PRP (Properties)  
(structure of)
- IT **36941-95-4**  
RL: PRP (Properties)  
(structure of)
- RN 36941-95-4 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene, 7-methyl-14-phenyl- (9CI) (CA INDEX NAME)



- L9 ANSWER 26 OF 42 HCAPLUS COPYRIGHT 2002 ACS
- 1981:514389 Document No. 95:114389 Electrogenerated chemiluminescence in mechanistic investigations of electroorganic reactions. Part III. Reduction of some disulfides at the dropping mercury electrode. Pragst, Fritz (Sekt. Chem., Humboldt-Univ., Berlin, DDR-104, Ger. Dem. Rep.). J. Electroanal. Chem. Interfacial Electrochem., 119(2), 315-30 (English) 1981. CODEN: JEIEBC. ISSN: 0022-0728.
- AB In the simultaneous cathodic redn. of RSSR (I; R = Ph, Bz) and fluorescent arom. hydrocarbons (II) at the dropping mercury electrode in DMF the emission of I is obsd. The electrogenerated chemiluminescence (ECL) originates from the electron transfer between the radical anion (III) of II and RS.bul., which are formed in a one-electron reductive cleavage of the S-S bond by III. As an intermediate, the anion radical (IV) of I is assumed. In the case of I (R = H) the ECL intensity is enhanced by proton donors (H2O, PhCO2H), which increase the cleavage rate of IV (R = Ph) in an electrophilic attack by the proton. The relatively neg. threshold redn. potential of II (-1.4 to -1.6 V) for the ECL in comparison with the half-wave potential (-0.85 V) supports an Hg-assisted heterogeneous redn. mechanism of I (R = Ph). The intensity-potential curves and the intensity-time curves at the Hg drop were measured for different concns. of I (R = Ph) and II and for different Hg pressures. No luminescence was obsd. with I (R = o-O2NC6H4, Et).
- CC 22-4 (Physical Organic Chemistry)  
Section cross-reference(s): 72
- IT 129-00-0, properties 197-61-5 198-55-0 206-44-0 218-01-9

517-51-1 781-43-1 1499-10-1 1806-34-4 **7229-88-1**

13386-12-4 78916-15-1 78916-16-2

RL: PRP (Properties)

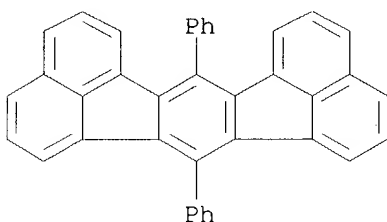
(electrogenerated chemiluminescence of disulfides in presence of,  
mechanism of)IT **7229-88-1**

RL: PRP (Properties)

(electrogenerated chemiluminescence of disulfides in presence of,  
mechanism of)

RN 7229-88-1 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 27 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1981:218053 Document No. 94:218053 Structure of 7,14-dibutylacenaphtho[1,2-k]fluoranthene. Seth, S.; Chakraborty, S. (Dep. Phys., Univ. Burdwan, Burdwan, 713104, India). Acta Crystallogr., Sect. B, B37(5), 1144-6 (English) 1981. CODEN: ACBCAR. ISSN: 0567-7408.

AB The title compd. is monoclinic, space group P21/c, with a 4.704(2), b 12.52(1), c 20.11(1) .ANG., and .beta. 96.01(2).degree.; d.(exptl.) = 1.22(1) and d.(calcd.) = 1.235 for Z = 2. The structure was solved by direct methods; final R = 0.085 for 1100 photog. data. At. parameters are given. The fluoranthene mol. is planar, and the Bu group is parallel to the a axis forming a zigzag chain. The Bu group has the normal configuration and dimensions, with C-C distances at 1.504(8)-1.527(7) .ANG., and is nearly perpendicular to the fluoranthene ring. Bond lengths and angles are close to normal values.

CC 75-5 (Crystallization and Crystal Structure)

Section cross-reference(s): 26

IT **36941-94-3**

RL: PRP (Properties)

(crystal structure of)

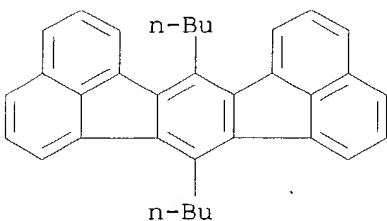
IT **36941-94-3**

RL: PRP (Properties)

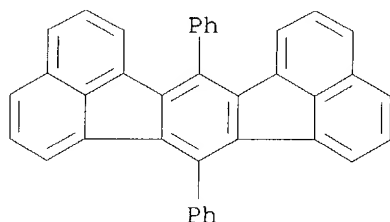
(crystal structure of)

RN 36941-94-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-dibutyl- (9CI) (CA INDEX NAME)



L9 ANSWER 28 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1981:29814 Document No. 94:29814 Electrogenerated chemiluminescence in mechanistic investigations of electroorganic reactions. Part I. Cathodic cleavage of bis(2,4,5-triphenylimidazolyl-1,2') (dilophyl). Pragst, Fritz; Kaltofen, Brigitte (Sekt. Chem., Humboldt-Univ., Berlin, DDR-104, Ger. Dem. Rep.). J. Electroanal. Chem. Interfacial Electrochem., 112(2), 339-45 (English) 1980. CODEN: JEIEBC. ISSN: 0022-0728.  
AB In the simultaneous cathodic redn. of bis(2,4,5-triphenylimidazolyl-1,2') (L2) and some arom. hydrocarbons A in DMF, the emission of A is obsd. This electrogenerated chemiluminescence (ECL) originates from electron transfer between A- and imidazolyl radicals L.bul., which are formed via cleavage of L2- into L.bul. and L-.  
CC 22-4 (Physical Organic Chemistry)  
IT 129-00-0, properties 198-55-0 206-44-0 218-01-9 517-51-1  
781-43-1 1499-10-1 **7229-88-1** 55087-79-1  
RL: PRP (Properties)  
(luminescence of, in cathodic redn. with dilophyl)  
IT **7229-88-1**  
RL: PRP (Properties)  
(luminescence of, in cathodic redn. with dilophyl)  
RN 7229-88-1 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



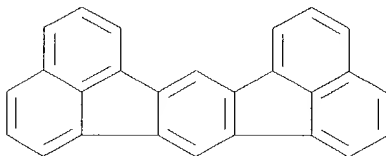
L9 ANSWER 29 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1980:615046 Document No. 93:215046 High-performance liquid chromatographic separation of high-molecular-weight polycyclic aromatic compounds in carbon black. Peaden, Paul A.; Lee, Milton L.; Hirata, Yukio; Novotny, Milos (Dep. Chem., Brigham Young Univ., Provo, UT, 84602, USA). Anal. Chem., 52(14), 2268-71 (English) 1980. CODEN: ANCHAM. ISSN: 0003-2700.  
AB High-mol.-wt. (>300 daltons) polycyclic arom. compds. which were extd. from a carbon black were sepd. by reversed-phase high-performance liq. chromatog. by using gradient elution. Fractions were collected and analyzed by mass spectrometry and spectrofluorimetry. While only 15 compds. could be pos. identified, 38 others were given tentative structural assignments, among which were several large S heterocycles.  
CC 80-5 (Organic Analytical Chemistry)  
IT 56-55-3 187-94-0 188-11-4 190-70-5 190-95-4 191-23-1 192-65-4  
193-39-5 **207-02-3** 6596-37-8 6596-38-9 53086-28-5  
75449-86-4 75449-87-5 75449-88-6 75449-89-7 75449-90-0  
75449-91-1 75449-92-2 75449-93-3 75449-94-4 75449-95-5  
75449-96-6 75449-97-7 75449-98-8 75449-99-9 75450-00-9  
75450-01-0 75459-00-6 75459-01-7 75459-02-8 75459-03-9  
75459-04-0 75459-05-1 75459-06-2 75459-07-3 75459-08-4  
75459-09-5  
RL: ANT (Analyte); ANST (Analytical study)  
(detection of, in carbon black exts. by reversed-phase high-performance liq. chromatog. and spectrometry)

IT 207-02-3

RL: ANT (Analyte); ANST (Analytical study)  
(detection of, in carbon black exts. by reversed-phase high-performance  
liq. chromatog. and spectrometry)

RN 207-02-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 30 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1980:85188 Document No. 92:85188 Estimation of triplet energies from  
electrogenerated chemiluminescence: possibilities and restrictions.  
Pragst, F.; Ziebig, R.; Boche, E. (Sekt. Chem., Humboldt-Univ., Berlin,  
DDR-104, Ger. Dem. Rep.). J. Lumin., 21(1), 21-41 (English) 1979. CODEN:  
JLUMA8. ISSN: 0022-2313.

AB The advantages and disadvantages of electrogenerated chemiluminescence  
(ECL) as a method for estg. triplet energies ET of org. compds. were  
demonstrated in several examples involving strong, weak or nonluminescent  
compds. In many cases, ET can be detd. within an error of  $\pm 0.1$  eV from  
the thermodyn. relations between electrochem. and spectroscopic data, from  
ECL quenching or from sensitized ECL. The method can also be successfully  
applied to substances in which phosphorescence and delayed fluorescence  
investigations have failed. Formation of exciplexes and irreversible  
reactions of the ion radicals may lead to misinterpretation of the  
results. In such cases, addnl. measurements were carried out to confirm  
the interpretation of the triplet mechanism and to rule out chem.  
complications.

CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance,  
and Other Optical Properties)

Section cross-reference(s): 22

IT 85-01-8, properties 92-85-3 92-94-4 100-22-1 103-30-0 103-33-3  
106-51-4, properties 129-00-0, properties 134-81-6 197-61-5  
198-55-0 206-44-0 218-01-9 260-94-6 366-29-0 486-25-9 517-51-1  
701-56-4 781-43-1 1009-61-6 1137-79-7 1499-10-1 1503-49-7  
1806-34-4 2142-03-2 2515-55-1 3264-21-9 3586-66-1 5471-63-6  
**7229-88-1** 13050-56-1 13386-12-4 13393-42-5 16012-31-0  
17754-68-6 27479-62-5 53103-86-9 53103-87-0 53103-88-1  
53103-90-5 55087-74-6 55087-79-1 69642-53-1

RL: PRP (Properties)

(triplet energy of, detn. by electrogenerated chemiluminescence)

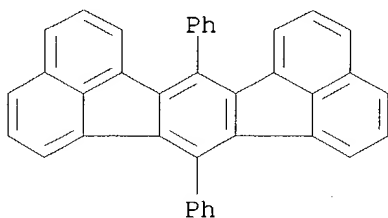
IT **7229-88-1**

RL: PRP (Properties)

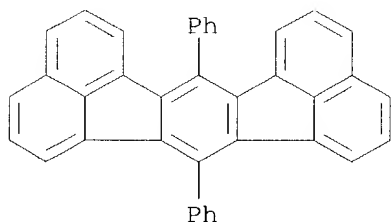
(triplet energy of, detn. by electrogenerated chemiluminescence)

RN 7229-88-1 HCAPLUS

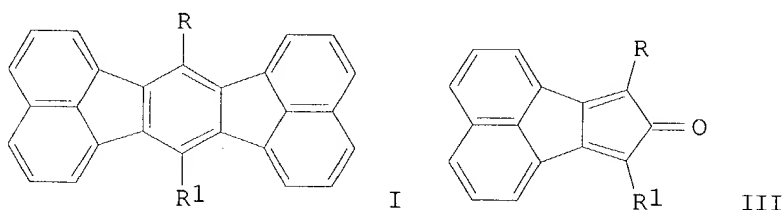
CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



- L9 ANSWER 31 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1979:556972 Document No. 91:156972 Effect of substituents on the T1 energy of trans-stilbenes. Alder, L.; Gloyna, D.; Wegener, W.; Pragst, F.; Henning, H. G. (Wissenschaftsber. Org. Chem., Humboldt-Univ. Berlin, Berlin, DDR-104, Ger. Dem. Rep.). Chem. Phys. Lett., 64(3), 503-6 (English) 1979. CODEN: CHPLBC. ISSN: 0009-2614.
- AB O-induced singlet-triplet absorption and electrochemiluminescence quenching expts. with substituted stilbenes indicate a small influence of monosubstitution or donor-acceptor disubstitution on the triplet energy, which implies a decrease of the S1-T1 energy differences particularly in the case of donor-acceptor substituted stilbenes.
- CC 22-4 (Physical Organic Chemistry)
- IT 7229-88-1 53103-87-0  
RL: PRP (Properties)  
(electrochemiluminescence of, quenching by p-methoxystilbene)
- IT 7229-88-1  
RL: PRP (Properties)  
(electrochemiluminescence of, quenching by p-methoxystilbene)
- RN 7229-88-1 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



- L9 ANSWER 32 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1978:104996 Document No. 88:104996 A convenient synthesis of 7,14-disubstituted acenaphtho[1,2-k]fluoranthenes. Banerjee, P. K.; Bhattacharya, A. J. (Dep. Chem., Univ. Burdwan, Burdwan, India). Indian J. Chem., Sect. B, 15B(10), 953-5 (English) 1977. CODEN: IJSBDB. ISSN: 0376-4699.
- GI



AB Acenaphtho[1,2-k]fluoranthenes I (R = R1 = C1-C5 alkyl or R = Ph, R1 = Me, Pr) were prepd. by Diels-Alder reaction of 1-chloroacenaphthylene (II) with acetylclones III in refluxing xylene. Yields of I are 69-76% after 15-20 min. II was prepd. by treating 1-acenaphthenone with PCl5 and III were prepd. by condensation of acenaphthenequinone with appropriate 2-propanones.

CC 26-6 (Condensed Aromatic Compounds)

IT **36941-91-0P 36941-92-1P 36941-93-2P**  
**36941-94-3P 36941-95-4P 36941-96-5P**  
**37050-35-4P**

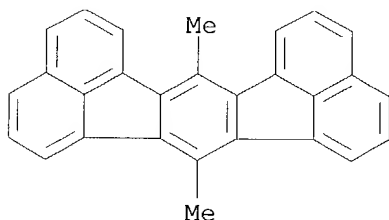
RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

IT **36941-91-0P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

RN 36941-91-0 HCAPLUS

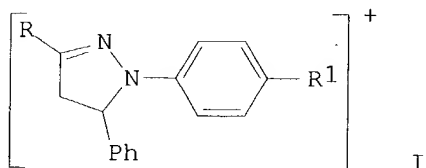
CN Acenaphtho[1,2-k]fluoranthene, 7,14-dimethyl- (9CI) (CA INDEX NAME)



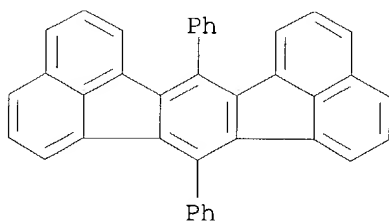
L9 ANSWER 33 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1976:522986 Document No. 85:122986 Electrochemical production of triplet states. IV. Electron transfer luminescence in the reaction between radical cations of 2-pyrazolines and radical anions of aromatic hydrocarbons and carbonyl compounds. Pragst, Fritz; Ziebig, Reinhard; Kunze, J.; Jugelt, Werner; Krause, Meinrad (Sekt. Chem., Humboldt-Univ. Berlin, Berlin, E. Ger.). Z. Phys. Chem. (Leipzig), 257(3), 465-81 (German) 1976. CODEN: ZPCLAH.

GI



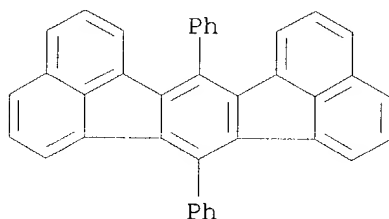
- AB The electron transfer reactions between pyrazoline radical cations (e.g. I; R = Ph, PhCH:CH, p-MeOC<sub>6</sub>H<sub>4</sub>, p-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>; R<sub>1</sub> = MeO, Me, Ph, H, MeO, Br) and the radical anions of arom. hydrocarbons (e.g. perylene, 9,10-diphenylanthracene) and of carbonyl compds. (e.g. fluorenone, benzophenone) proceed via a triplet mechanism. The triplet energies of the pyrazoline derivs. were detd. via electrochem. luminescence spectra.
- CC 22-4 (Physical Organic Chemistry)
- IT 34471-61-9 34483-92-6 34488-57-8 34505-57-2 34505-64-1  
34505-65-2 34509-92-7, reactions 34512-39-5 34512-41-9, reactions  
34512-55-5 43069-97-2 **60466-00-4** 60466-01-5  
RL: PRP (Properties)  
(electron transfer between pyrazoline radical cations and, mechanism of)
- IT **60466-00-4**  
RL: PRP (Properties)  
(electron transfer between pyrazoline radical cations and, mechanism of)
- RN 60466-00-4 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl-, radical ion(1-) (9CI) (CA INDEX NAME)



- L9 ANSWER 34 OF 42 HCAPLUS COPYRIGHT 2002 ACS
- 1976:142938 Document No. 84:142938 Production of electrochemical luminescence. Pragst, Fritz; Ziebig, Reinhard; Siefke, Baerbel (E. Ger.). Ger. (East) DD 113241 19750520, 7 pp. (German). CODEN: GEXXA8. APPLICATION: DD 1974-179639 19740702.
- AB Electrochemiluminescence is produced by solns. of monomeric or dimeric 1-aryl-.DELTA.2-pyrazolines such as 1-p-anisyl-3-p-biphenyl-5-phenyl-.DELTA.2-pyrazoline and 1-p-biphenyl-3,5-diphenyl-.DELTA.2-pyrazoline, alone or mixed with other 1-aryl-.DELTA.2-pyrazolines or with other luminescing or nonluminescing compds. Thus, 2 Pt electrodes, each with an area of 18 mm<sup>2</sup>, were immersed in 10 ml of a soln. of 15 mg 1-p-anisyl-3-p-biphenyl-5-phenyl-.DELTA.2-pyrazoline and 760 mg Et<sub>4</sub>NC<sub>10</sub>4 in dry O-free N,N-dimethylformamide. After application of a 50-Hz rectangular voltage of 2.9 V, a green luminescence appeared at the electrode which was easily visible in subdued daylight and which could be intensified by increasing the voltage and by stirring the soln.
- IC C09K
- CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)
- IT 197-61-5 198-55-0 206-44-0 1499-10-1 1806-34-4 **7229-88-1**  
RL: PRP (Properties)  
(electrochemiluminescence of arylpyrazoline solns. contg.)
- IT **7229-88-1**  
RL: PRP (Properties)  
(electrochemiluminescence of arylpyrazoline solns. contg.)
- RN 7229-88-1 HCAPLUS



CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 35 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1976:67266 Document No. 84:67266 Direct formation of excited singlet states in the electrogenerated chemiluminescence of mixed systems involving N-aryl-2-pyrazolines. Pragst, F.; Fabian, G.; Ziebig, R.; Schmidt, D.; Jugelt, W. (Sekt, Chem., Humboldt-Univ. Berlin, Berlin, E. Ger.). Chem. Phys. Lett., 36(5), 630-4 (English) 1975. CODEN: CHPLBC.

AB The direct formation of the excited singlet states  $1p^*$  in the electron transfer reaction between the cation radicals  $P.\dot{c}ntdot{+}$  of certain N-aryl-2-pyrazolines and the anion radicals  $M.\dot{c}ntdot{-}$  of some polycyclic arom. hydrocarbons, and aryl-substituted oxazoles and oxadiazoles is obsd. in electrogenerated chemiluminescence studies using measurements of the relative emission intensities and investigations in a magnetic field.

CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

IT 92-71-7 129-00-0, properties 206-44-0 218-01-9 725-12-2 852-38-0  
1806-34-4 2083-09-2 2142-03-2 **7229-88-1** 17064-22-1  
RL: PRP (Properties)

(electrochemiluminescence of arylpyrazolines in presence of, excited singlet state formation in)

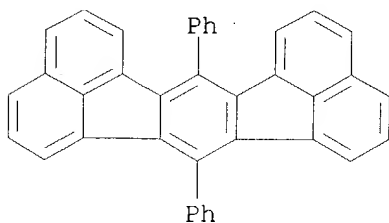
IT **7229-88-1**

RL: PRP (Properties)

(electrochemiluminescence of arylpyrazolines in presence of, excited singlet state formation in)

RN 7229-88-1 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 36 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1975:124297 Document No. 82:124297 Application of the Hammett-Streitwieser equation to predictions of para-band location in uv and visible spectra of benzologs of perylene and fluoranthene. Krygowski, T. M.; Kruszewski, J. (Inst. Fundam. Probl. Chem., Univ. Warsaw, Warsaw, Pol.). Bull. Acad. Pol. Sci., Ser. Sci. Chim., 22(12), 1059-64 (English) 1974. CODEN: BAPCAQ.

AB A linear correlation of  $\lambda_{para}$  and  $\sigma_{r+}$  was formed for

28 condensed fluoranthenes and perylenes. The Hammett-Streitweiser position consts.  $\sigma_{\text{r}}$  were chosen from the position which, by localized bonds, joins 2 delocalized parts of the mol. through a so-called "empty" ring.

CC 22-2 (Physical Organic Chemistry)

IT 187-96-2 188-72-7 188-89-6 190-36-3 190-39-6 191-06-0 191-29-7  
191-48-0 191-79-7 191-81-1 191-85-5 191-87-7 193-21-5 197-69-3  
197-70-6 197-74-0 198-55-0 203-05-4 203-23-6 203-33-8 205-82-3  
205-99-2 206-44-0 207-02-3 207-08-9 340-19-2 387-08-6  
55006-07-0

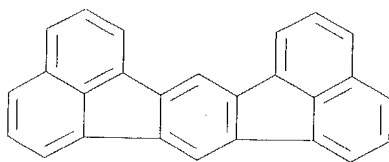
RL: PRP (Properties)  
(ir and visible spectra of, Hammett equation in relation to location of para-band in)

IT 207-02-3

RL: PRP (Properties)  
(ir and visible spectra of, Hammett equation in relation to location of para-band in)

RN 207-02-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 37 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1975:124276 Document No. 82:124276 Electrochemical generation of triplet states. II. Electrochemical luminescence of rubicene, 7,14-diphenylacenaphtho[1,2-k]fluoranthene, and phenyl-substituted fluoranthenes in systems with tertiary aromatic amines. Pragst, Fritz; Gruenberg, Claudia; Knaack, Johanna; Jugelt, Werner (Sekt. Chem., Humboldt-Univ., Berlin, E. Ger.). Z. Phys. Chem. (Leipzig), 255(4), 696-710 (German) 1974. CODEN: ZPCLAH.

AB The cathodic redn. and electrochemiluminescence (generated by rectangular pulses) of rubicene, 7,14-diphenylacenaphtho[1,2-k]fluoranthene (I), and three Ph-substituted fluoranthenes in mixed system with tertiary arom. amines were studied in DMF. The dependence of the luminescence intensity on the anodic half-wave potential of the amines gave the triplet and singlet excitation energies 2.33 and 3.0, 2.28 and 3.10, 2.05 and 2.74, and 1.53 and 2.28 eV for fluoranthene, 7,8,10-triphenylfluoranthene, I, and rubicene, resp. The missing luminescence in the reaction of the hydrocarbon radical anions with the dications of the amines or ferrocene cations showed that no emission occurs if the addnl. product formed has lower-lying excited states or causes the nonradiative release of the reaction energy.

CC 22-2 (Physical Organic Chemistry)

IT 197-61-5 206-44-0 7229-88-1 13238-75-0 55087-78-0  
55087-79-1

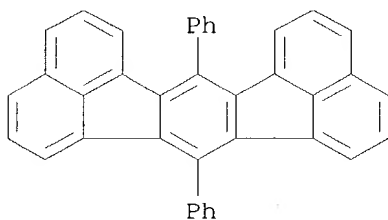
RL: PRP (Properties)  
(electrochemiluminescence of, in presence of arom. amines, triplet energy from)

IT 7229-88-1

RL: PRP (Properties)  
(electrochemiluminescence of, in presence of arom. amines, triplet energy from)

RN 7229-88-1 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 38 OF 42 HCAPLUS COPYRIGHT 2002 ACS

1972:405225 Document No. 77:5225 Synthesis of 7,14-disubstituted acenaphtho[1,2-k]fluoranthenes. Bhattacharjee, A. J.; Mandal, S. N. (Org. Chem. Lab., Univ. Burdwan, Burdwan, India). Curr. Sci., 40(20), 546-7 (English) 1971. CODEN: CUSCAM.

GI For diagram(s), see printed CA Issue.

AB Dienones I were condensed with acenaphthylene at 130-40.degree. without solvent to give the 6b, 14a-dihydro derivs. of II, which were aromatized in boiling xylene or Tetralin to give the title compds. II) (R and R1 given: Me, Me; Et, Et; Pr, Pr; Bu, Bu; n-C5H11, n-C5H11; Ph, Me; Ph, Pr).

CC 26-4 (Condensed Aromatic Compounds)

IT 36941-85-2P 36941-86-3P 36941-87-4P 36941-88-5P 36941-89-6P

36941-90-9P **36941-91-0P** **36941-92-1P****36941-93-2P** **36941-94-3P** **36941-95-4P****36941-96-5P** 37050-34-3P **37050-35-4P**

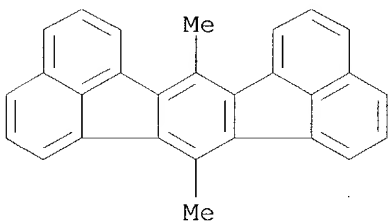
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT **36941-91-0P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 36941-91-0 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene, 7,14-dimethyl- (9CI) (CA INDEX NAME)

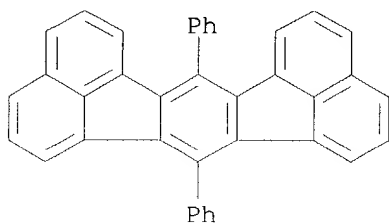


L9 ANSWER 39 OF 42 HCAPLUS COPYRIGHT 2002 ACS

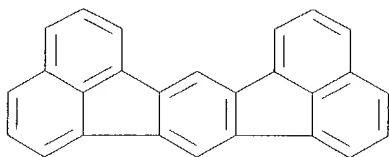
1970:477732 Document No. 73:77732 Hydrocarbon ladder aromatics from a Diels-Alder reaction. Stille, John K.; Noren, Gerry K.; Green, Linda L. (Dep. Of Chem., Univ. of Iowa, Iowa City, Iowa, USA). J. Polym. Sci., Part A-1, 8(8), 2245-54 (English) 1970. CODEN: JPLCAT.

AB The Diels-Alder homopolycycloaddn. of 2,5-diphenyl-3,4-(5,6-acenaphthylenylene) cyclopentadienone affords a low mol. wt. sol. ladder polymer having reduced specific viscosities between 0.17 and 0.25 dl/g in benzene and an insol. fraction of higher mol. wt. The ladder polymers exhibited a major thermogravimetric anal. break at 450.degree. in an air

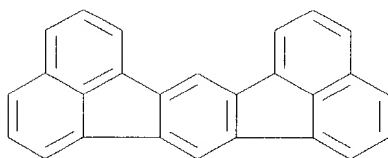
atm. and lost approx. 30% of their wt. at 700.degree. in a N atmosphere.  
CC 35 (Synthetic High Polymers)  
IT 641-57-6P **7229-88-1P** 28015-29-4P 28311-12-8P 28399-09-9P  
28526-70-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT **7229-88-1P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
RN 7229-88-1 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene, 7,14-diphenyl- (8CI, 9CI) (CA INDEX NAME)



L9 ANSWER 40 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1966:465370 Document No. 65:65370 Original Reference No. 65:12147e-g  
Unusual Wittig reaction with benzil. Bergmann, Ernst D.; Agranat, Israel  
(Hebrew Univ., Jersusalem). J. Org. Chem., 31(7), 2407-9 (English) 1966.  
CODEN: JOCEAH. ISSN: 0022-3263.  
GI For diagram(s), see printed CA Issue.  
AB PPh<sub>3</sub> in dry xylene and 1,8-(BrH<sub>2</sub>C)<sub>2</sub>C<sub>10</sub>H<sub>6</sub> refluxed 1 hr. (inert atm.) and  
the intermediate bis(phosphonium bromide) taken up in alc. contg. BzH, the  
mixt. treated slowly (inert atm.) with 0.2M LiOEt-EtOH and the colorless  
product crystd. from C<sub>6</sub>H<sub>12</sub> gave 1,8-distyrylnaphthalene. Similar reaction  
of the bis(phosphonium bromide) with 2-naphthaldehyde in alc. and 0.2M  
LiOEt-EtOH yielded 80% 1,8-bis[.beta.-(2-naphthyl)vinyl]naphthalene,  
fluorescence peak at 440 m.mu. (dioxane). The analogous reaction with Bz  
gave a yellowish-green hydrocarbon (I) formed by reaction of 1 mole benzil  
with 2 moles of the bis(phosphorane) and spontaneous dehydrogenation or H  
transfer involving elimination of 4 H atoms. The intermediary diene  
comps. from this stoichiometry would cyclize to I and to the fluoranthene  
(II). Comparison of the uv spectra of I and II with those of the known  
nonphenylated parent comps showed that formula I was preferable and that  
I is a known compd. (Clapp, CA 34, 4114). A similar reaction with  
4,4'-dichlorobenzyl yielded 7% yellow 4,5-bis(p-  
chlorophenyl)acenaphtho[1,2-f]fluoranthene.  
CC 36 (Condensed Aromatic Compounds)  
IT 193-21-5, Acenaphtho[1,2-j]fluoranthene **207-02-3**,  
Acenaphtho[1,2-k]fluoranthene 7213-60-7, Naphthalene, 1,8-distyryl-  
7213-61-8, Acenaphtho[1,2-j]fluoranthene, 4,5-diphenyl- 7213-62-9,  
Acenaphtho[1,2-j]fluoranthene, 4,5-bis(p-chlorophenyl)- 7274-37-5,  
Naphthalene, 1,8-bis[2-(2-naphthyl)vinyl]-  
(prepn. of)  
IT **207-02-3**, Acenaphtho[1,2-k]fluoranthene  
(prepn. of)  
RN 207-02-3 HCAPLUS  
CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- L9 ANSWER 41 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1965:406773 Document No. 63:6773 Original Reference No. 63:1221h,1222a  
Simple L.C.A.O. method for some nonalternant hydrocarbons. Igolkin, V.  
N.; Mestechkin, M. M. (Vestn. Leningr. Univ.). Ser. Fiz. i Khim., 20(4),  
5-10 (Russian) 1965.
- AB cf. CA 61, 171f. L.C.A.O. method (CA 54, 14920d; 55, 19742c) was used to  
det. bond order, bond lengths, net charges, free valences, and  
superdelocalizabilities in the following nonalternant hydrocarbons:  
fluoranthene, 11,12-perinaphthalenefluoranthene,  
periphenylenefluoranthene, and periflanthene. Some of the data for these  
compsd. were reported by Clar (Aromatische Kohlenwasser-stoffe, Berlin:  
Springer-Verlag, 1952, 481 pp.). Bond lengths were calcd. from the  
relation developed by Coulson (CA 55, 27147a).
- CC 3 (General Physical Chemistry)
- IT 188-94-3, Diindeno[1,2,3-cd:1',2',3'-lm]perylene 193-43-1,  
Indeno[1,2,3-cd]fluoranthene 206-44-0, Fluoranthene **207-02-3**,  
Acenaphtho[1,2-k]fluoranthene  
(bonds and electronic structure of)
- IT **207-02-3**, Acenaphtho[1,2-k]fluoranthene  
(bonds and electronic structure of)
- RN 207-02-3 HCAPLUS
- CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- L9 ANSWER 42 OF 42 HCAPLUS COPYRIGHT 2002 ACS  
1964:432249 Document No. 61:32249 Original Reference No. 61:5584c-h,5585a-c  
Annellation effects in the fluoranthene series. Clar, E.; Stephen, J. F.  
(Univ. Glasgow, UK). Tetrahedron, 20(6), 1559-66 (Unavailable) 1964.
- GI For diagram(s), see printed CA Issue.
- AB A systematic study of the absorption spectra of benzologs of fluoranthene  
showed that the .beta.- and .beta.'-band of fluoranthene originated from 2  
different absorptions of polarized light. The .beta.-band at 2360 A.  
resulted from polarization along the naphthalene complex and the  
.beta.-band at 2870 A. from polarization from it. These results were  
discussed in detail. A no. of higher annealed fluoranthenes was  
synthesized. A suspension of 0.8 g. LiAlH<sub>4</sub> in 50 ml. tetrahydrofuran  
(THF) was treated with a 5 g. I (Campbell and Gow, CA 44, 595d) in 75 ml.  
THF and the mixt. boiled 2 hrs. to give 2.6 g. 10,11,12,13-tetrahydro-  
11,12-bis(hydroxymethyl)fluoranthene (II), m. 185-6.degree.. When treated  
with PBr<sub>3</sub>, II gave only resins. Similarly 3.8 g. III (loc. cit.) in 160  
ml THF on treatment with 0.84 g. LiAlH<sub>4</sub> in 30 ml. THF gave 1.97 g.

11,12-bis(hydroxymethyl)fluoranthrene (IV), m. 180-1.degree.. Refluxing a mixt. of 1.97 g. IV and 4.8 g. PBr<sub>3</sub> in 250 ml. benzene gave 1.9 g. 11,12-bis(bromomethyl)fluoranthrene (V), m. 197-8.degree.. A soln. of 370 mg. KCN in a little H<sub>2</sub>O and 80 ml. EtOH was mixed with 1 g. V and the mixt. refluxed 2 hrs. to give 100 mg. 11,12-bis(cyanomethyl)fluoranthrene (VI), m. 229-30.degree.. A mixt. of 100 mg. VI, 70 mg. acenaphthenequinone, 10 ml. pyridine, and 0.5 ml. piperidine was refluxed 15 min. to give 120 mg. 1,4-dicyano-2,3:6,7-di(peri-naphthylene)naphthalene (VII), m. >500.degree.. An intimate mixt. of 100 mg. VII and soda lime was made into a thick paste with satd. KOH and heated under N at 400.degree. 5 min. The product was chromatographed over Al<sub>2</sub>O<sub>3</sub> to give 20 mg. 2,3:6,7-di(peri-naphthylene)naphthalene (VIII), m. 368-70.degree.. A mixt. of 3.3 g. IX (loc. cit.) and 1.9 g. 2,2',3,3',4,4',5,5'-octahydro-diphenyl (X) was heated to a deep red viscous oil which was refluxed a few sec. to give 530 mg. decahydro-1,2:3,4-dibenzo-6,7-peri-naphthyleneanthraquinone (XI), m. 300-1.degree.. It gave a violet vat with alk. Na dithionite and a green soln. in concd. H<sub>2</sub>SO<sub>4</sub> which changed to violet on standing. A mixt. of 850 mg. XI, 850 mg. NaCl, and 4.25 g. ZnCl<sub>2</sub> was fused and heated at 320.degree. 4 min. and cooled and ZnCl<sub>2</sub> removed with HOAc. The residue was washed with NH<sub>3</sub> and H<sub>2</sub>O, dried, and dehydrogenated with Cu powder at 300.degree. under CO<sub>2</sub> 4 min. to give 200 mg. 1,2:3,4-dibenzo-6,7-peri-naphthaleneanthracene (XII), m. 344-6.degree.. A mixt. of 1 g. XIII (loc. cit.), 1 g. Zn dust, 1 g. NaCl, and 5 g. moist ZnCl<sub>2</sub> was heated at 320.degree. 4 min. and cooled, the residue digested with aq. HOAc, Zn dust removed with concd. HCl, and the residue washed with NH<sub>3</sub> and H<sub>2</sub>O to give 100 mg. 2,3:6,7-di-peri-naphthyleneanthracene (XIV), m. 460.degree.. In an alternate procedure, 1 g. XIII and 5 g. Zn dust was refluxed in 50 ml. pyridine 6 hrs. out of contact of air with addn. of 14 ml. 95% HOAc in portions at intervals of 1 hr. The reaction mixt. was poured into dil. HCl and filtered and the residue washed with NH<sub>3</sub> and H<sub>2</sub>O, dried, and heated with Cu powder at 320.degree. under N 5 min. to give 80 mg. XIV. Ultraviolet spectra of many compds. were given.

CC 36 (Condensed Aromatic Compounds)

IT 207-02-3, Acenaphtho[1,2-k]fluoranthene 207-24-9,  
Benzo[1,2-k:4,5-k']difluoranthene 93655-08-4, 8,9-Fluoranthenedimethanol  
93819-54-6, Fluoranthene, 8,9-bis(bromomethyl)- 93877-34-0,  
8,9-Fluoranthenedimethanol, 7,8,9,10-tetrahydro- 95429-56-4,  
8,9-Fluoranthenediacetonitrile 103283-42-7, Fluorantheno[8,9-  
k]fluoranthene-7,16-dicarbonitrile 105022-91-1, Fluorantheno[8,9-  
b]triphenylene-9,18-dione, 1,2,3,4,5,6,7,8,8a,18b-decahydro-  
(prepn. of)

IT 207-02-3, Acenaphtho[1,2-k]fluoranthene  
(prepn. of)

RN 207-02-3 HCAPLUS

CN Acenaphtho[1,2-k]fluoranthene (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

